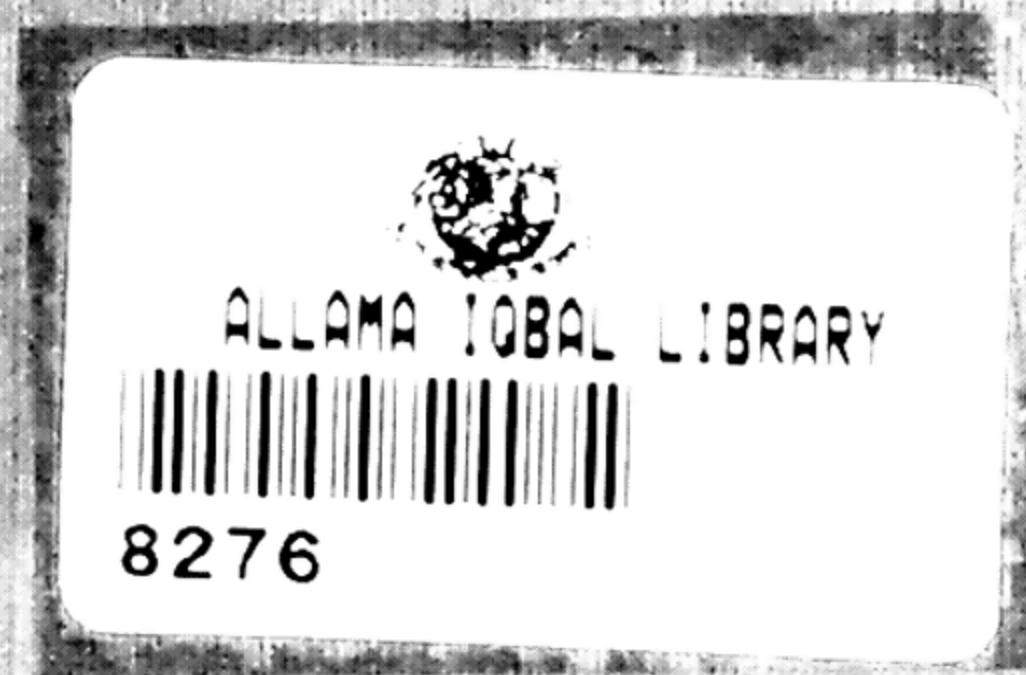


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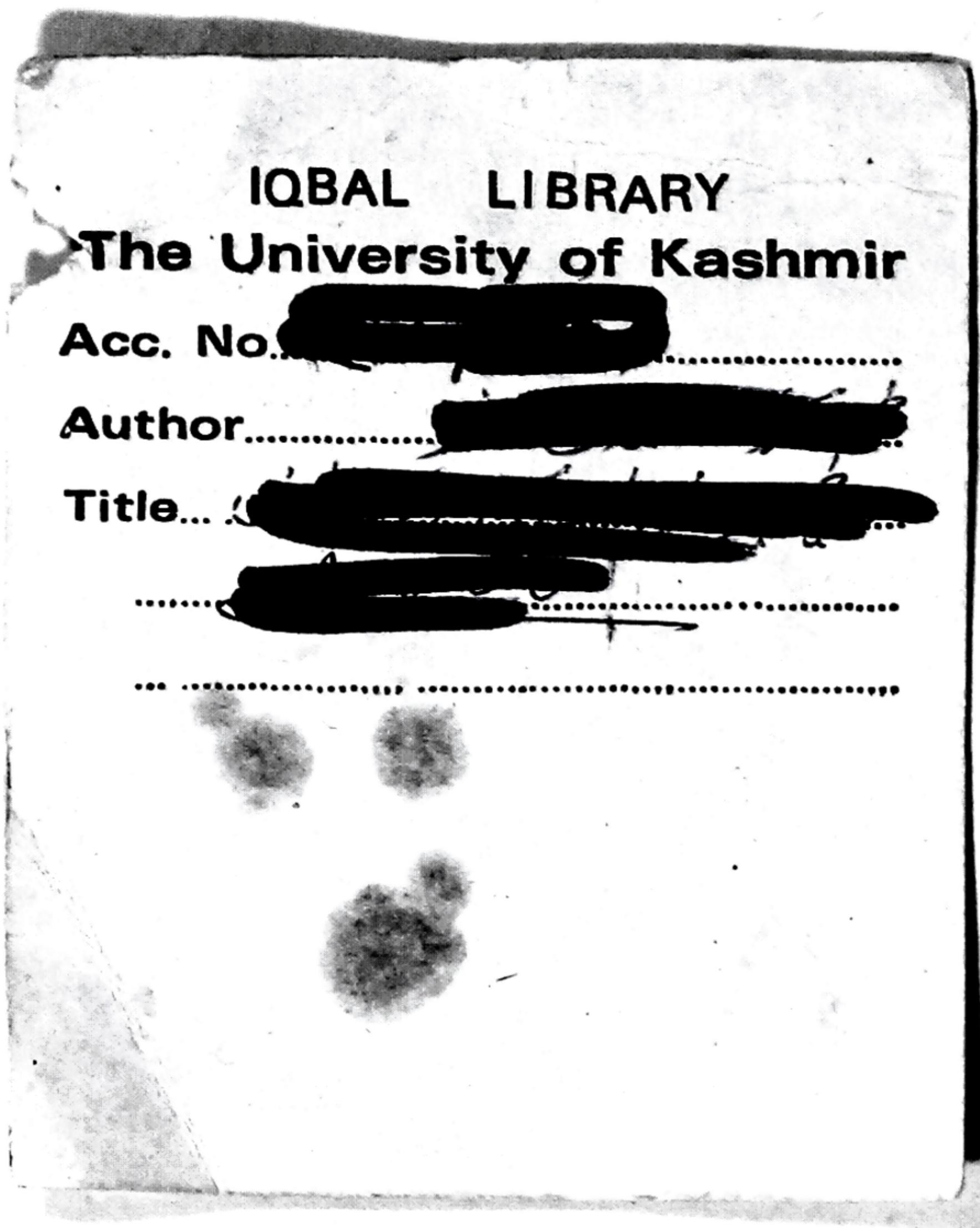
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**SOUTH AMERICA AUSTRALIA
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FAIRGRIEVE AND YOUNG



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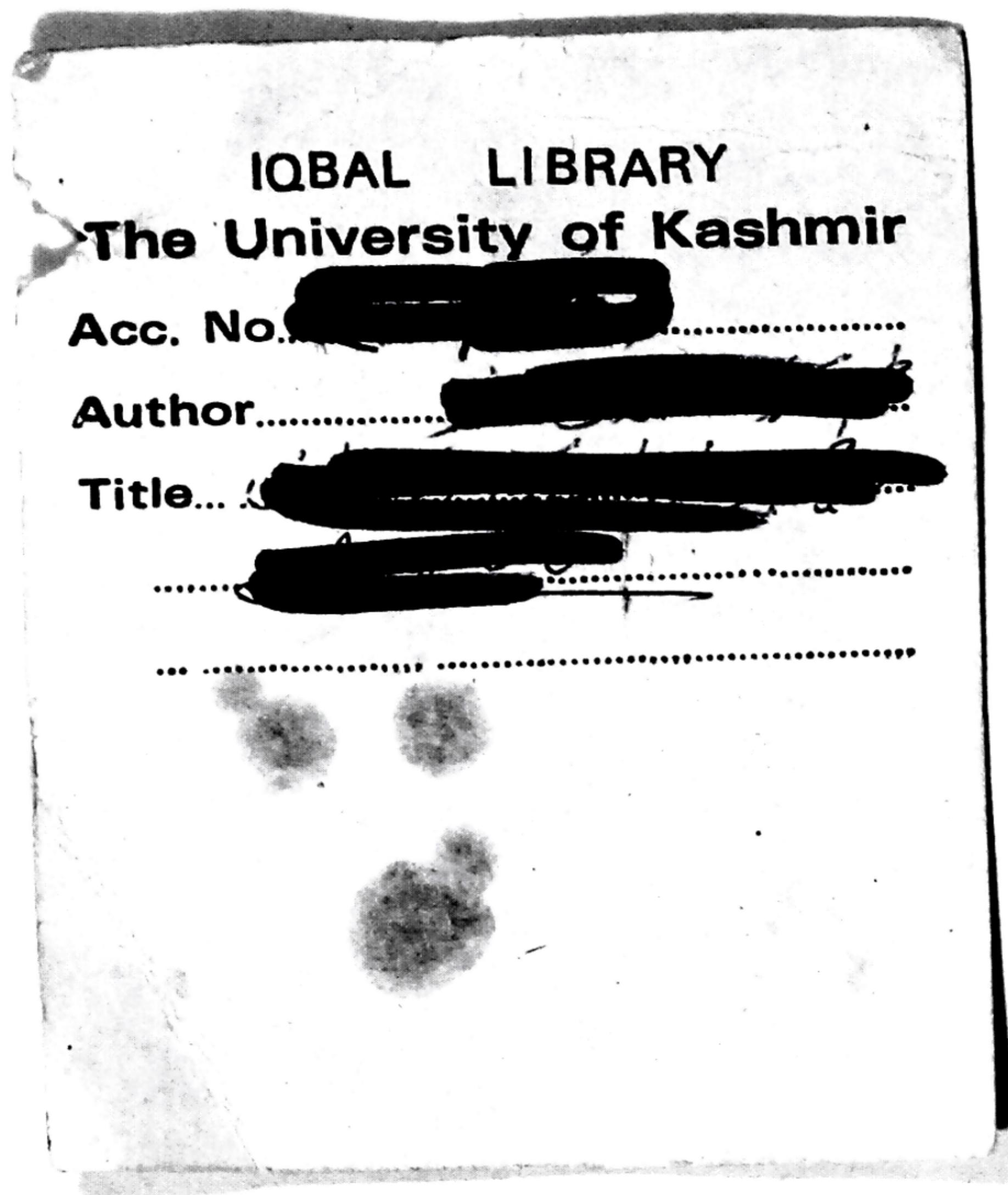
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VISITING SOUTH AMERICA, AUSTRALIA AND NEW ZEALAND

BY

J. FAIRGRIEVE, M.A.

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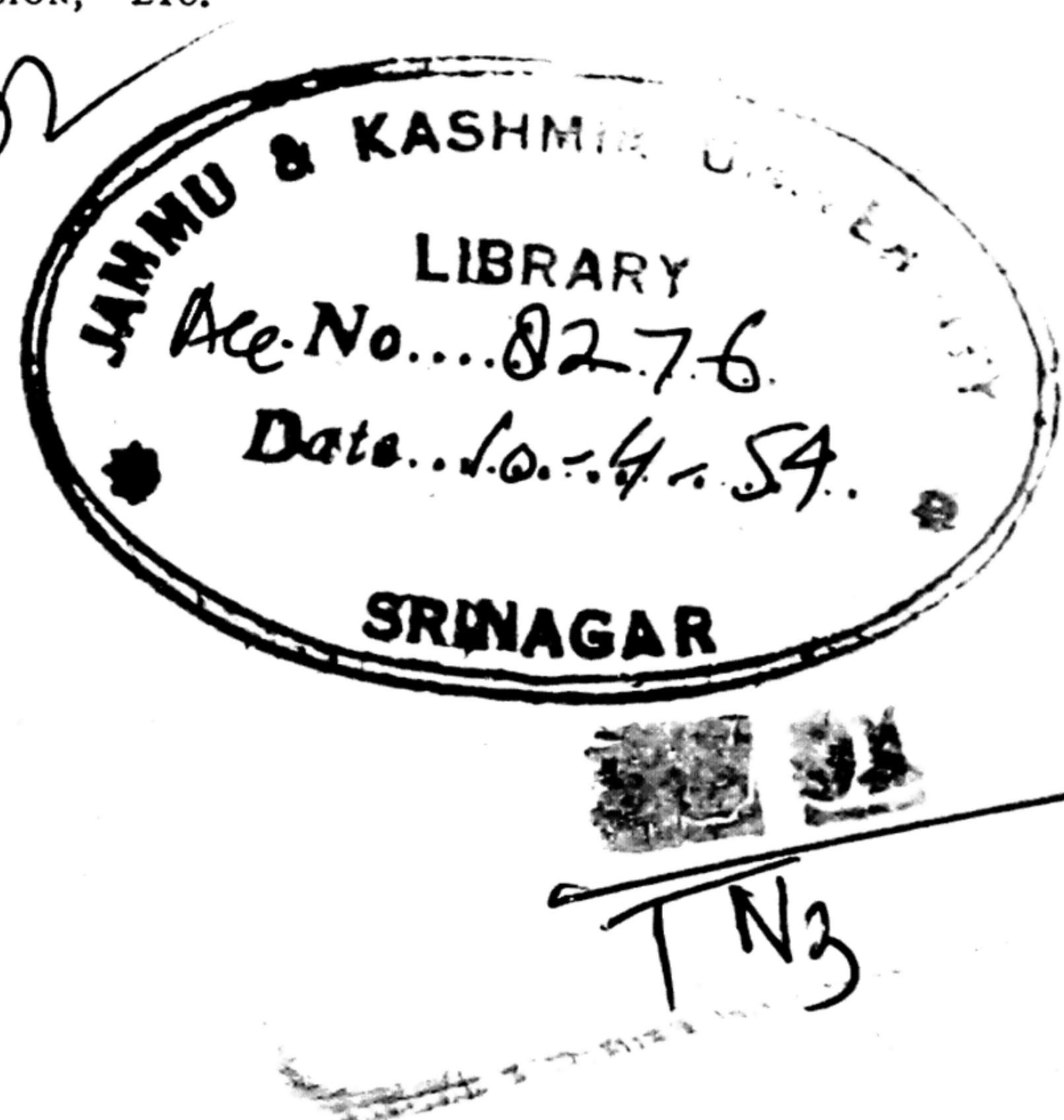
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SECOND EDITION

LONDON

GEORGE PHILIP & SON, LIMITED, 32 FLEET STREET, E.C.4
LIVERPOOL: PHILIP, SON & NEPHEW, LTD., 50 CHURCH STREET

1948



REAL GEOGRAPHY

by

J. FAIRGRIEVE, M.A., & ERNEST YOUNG, B.Sc.

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New Zealand.

Book II. North America.

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FIRST EDITION	July, 1939
Reprinted	November, 1945
SECOND EDITION	June, 1948

PREFACE

The series may, on a cursory glance, appear little different from other school textbooks of geography, but it has a number of unusual features.

(1) The *essential* part of each "chapter" is the set of questions or exercises at the end entitled "work to be done." They correspond to "examples" in an arithmetic book. The text and pictures are intended merely to supply material by which boys and girls may answer the questions and find out things for themselves. The questions are not questions on what has been learned; they are not "test" questions. They are intended to send the pupils back to the chapter to re-read it with the object of finding out what is said in the text, *i.e.* they encourage real reading and learning.

(2) Each chapter deals with a particular real place. Generalisations are made only after a particular place has been studied. Material is provided in order to make such generalisations reasonable. In fact the teaching maxim "*From the particular to the general*" is observed.

(3) The pictures form an essential and integral part of each chapter. They are not merely illustrations or embellishments but fundamental real material on which the text is based and which is used in the work to be done. Some of them have been specially taken and all have been selected with great care.

(4) While each chapter is complete in itself it contributes to the development of a coherent whole. The scheme on

PREFACE

which each book is based appears at the end in a Summary which shows the relation of each chapter, and of the contents of each chapter, to the whole.

(5) In view of the fact that the books are designed for use in senior schools the subject matter has been kept as simple as possible and an enormous amount has been omitted that some teachers may consider necessary. But an attempt has been made to avoid sloppiness at all costs and to make the study of geography worth while.

(6) Each book is intended to be used for half an academic year. The areas and subjects dealt with are given at the end of each. While the arrangement and general treatment are regional, opportunity is taken to deal with physical and economic geography; the chief products are all described where it is most convenient to do so. Six books cover the world in three years.

J. F.
E. Y.

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CHAPTER I

THE INDIANS OF THE GREAT FOREST

1. *On a globe find the British Isles, the Continents, Europe, Asia, Africa, North America and South America, the Atlantic Ocean and the Equator.*
2. *On a map of South America find each of the following as you come to them in this chapter, Brazil, Para, Manaos, the River Amazon, the Rio (i.e. river) Negro.*

WE are going to South America, and then up the great river Amazon in Brazil. Imagine that we have crossed the Atlantic and that we have arrived at Para. We have still a long way to go. If we could travel by aeroplane we should see beneath us, as in Fig. 1, a great dense forest stretching in all directions with many rivers, great and small, flowing through it. Here and there, if we were not too high, we might catch sight of what look like little islands of yellow, violet or crimson ; these are patches of flowers, each patch as big as a circus tent.

It all appears so jolly that we should wish to go into it. But if we tried to enter this forest we should not find it at all a jolly place. It is hot, damp and stuffy and, because the top-most branches and their leaves shut out the light, it is very dark. The trees are packed closely together, each one struggling to raise its head into the forest roof where there is light. Creepers, as thick as ropes, spread themselves from tree to tree or hang in great loops. The forest is just one big tangle.

Then, also, it is full of dangerous animals. Most of them are not so very big : big animals would find it difficult to move about. One of the largest is the jaguar. It is something like



[Shepstone

FIG. 1.—An Aeroplane Flying over the Amazon Forest
The only part clear of trees is the river

a tiger, but it lives, most of the time, not on the ground but amongst the branches. It moves quietly but quickly from tree to tree and is ready, at any moment, to spring down upon anything it wants to eat.

The worst things are poisonous snakes that wriggle about in the mud on the ground and hundreds of different kinds of terrible insects. Some of the snakes are so large and strong that they could easily crush any animal as big, say, as a sheep, in their coils. There are leeches that fix themselves on your skin and suck your blood. There are ants an inch long that sting like a red hot needle.

Amongst the branches are bats that bite, birds that bark like a dog and have spikes on their wings as well as fierce claws on their feet, and many kinds of monkeys, some of which might pelt you with Brazil nuts. These nuts grow about a dozen together in large, hard shells as big as a coconut and a bang on the head from one of them would hurt very much.

In the rivers are fish no bigger than a herring that could bite the tail off a dog and others that have a kind of tail with a poisonous spike in it. There are crocodiles either in the water or in the mud on the banks waiting with cruel, open mouths for what they can devour.

The forest is so thick that it is impossible to travel through it without cutting down trees and shrubs almost every yard of the way, and it is so warm and damp that in a few weeks the path that has been made with so much trouble will all be overgrown again. A few aeroplanes now fly over a very small part of the forest, but till very recently the only way to travel from one part to another was the way in which we have to travel, that is by water. There is so much rain at all seasons that the rivers never dry up and many of them are very large. The most important of them is the Amazon, the largest river in the world. We can go up the Amazon as far as Manaos by a quite large vessel, but after that travel is not so easy and we have to go in small canoes, first up the river Negro, then up a tributary called the Branco and, finally, to near the end of another small stream.

We should not find many people in the forest itself ; the forest is a very lonely place. But in it are a number of tribes who live on, or close to, the banks of the rivers where they can catch fish and move about. Each of these tribes is, however, very small in number. We are going to visit a village of a small tribe called the Maiongongs. Well, here we are. There is only one house. Let us go ashore to have a look at it and the people in it. The house is built a little way from the river on a bit of rising ground to keep the floor out of the damp but close to the water where the fish are. It is so big that a dozen families, or nearly a hundred people, live together all in the same house at the same time. There it is in Fig. 2.

The framework of the house is of tall, straight tree poles with cross-beams and rafters lashed to them by strong creepers. The roof and the sides are thatched with large leaves, some of them from palms. In the centre of the house is a clear space, and on the sides are walls of palm-leaf thatch dividing off the rooms, one for each family. In the centre of the roof is a kind of trap-door which can be lifted by ropes to

[By courtesy of Dr. A. Hamilton Rice

FIG. 2.—A Maiongong House





[By courtesy of Dr. A. Hamilton Riddell]

FIG. 3.—A Maiongong Woman arriving at the House with a Load of Cassava

let in light and air. In Fig. 2 it is open and casts a strong shadow. The doors are like dog kennels, each covered with a large palm mat, hung from the top, held up by a pole during the day and let down at night.

In Fig. 2 there is another building on the right of the large house ; this is shown again in Fig. 3, where it is seen to have no walls but to be merely a shelter from the sun and the rain.

In the house are plenty of hammocks in which to sleep. They are made of string twisted from fibres of leaves. There are also woven baskets, wooden stools, earthen pots, pans, pitchers and cooking utensils made of clay from the river, besides bows and arrows and spears.

These Indians grow some of their food. It is because they grow food that they can have a house. They could not grow crops if they wandered about ; to grow crops they have to settle in one place and then it is worth while to build a house. Trees, shrubs and creepers grow very well, but it is not easy to grow crops. Before these can be grown a bit of the forest must be cleared away. One part that has been cleared is seen on the right of Fig. 2. There is another some distance away in the forest.



[Shepstone

FIG. 4.—Cassava.
The roots, which are
eaten, are seen in
Fig. 3.

The men cut down the trees with iron axes and knives that they obtain from tribes living north of them, or even with stone axes which they used before they ever heard of iron. The fallen trees and brushwood are left for some months to dry as much as possible and are then burnt.

In the cleared ground the women plant sugar cane, maize, bananas, peppers, tobacco and manioc or cassava, but specially cassava. In Fig. 4 is a picture of cassava growing ; cassava is a shrub with a thick root. The root, which is the part which is eaten, contains a deadly poison, and all the poison must be removed before it can be used for food.

The great, heavy roots have to be carried home on the backs of women from the clearing in large baskets. There in Fig. 3 is a woman just arriving back with a load ; she has stopped to look at a splinter in the little boy's hand. The roots are washed, peeled and grated on large wooden graters about three feet long and a foot wide, covered all over with bits of sharp stone each about as big as the head of a small nail. One of these is seen in Fig. 3 resting on a wooden trough that holds the grated root. This is then soaked in water to form a kind of pulp and put into long, thin, string bags which are hung from poles ten feet high ; in these it is pressed till all the water is squeezed out. This washes away the poison. The



[By courtesy of D. A. Hamilton Rice]

FIG. 5.—Fishing with Bow and Arrow

poles from which the bags hang are just to the right of the large house in Fig. 2.

The pulp, dry and safe to eat, is at once made into large flat cakes and roasted over a fire. These cakes, when baked, are sweet and pleasant to the taste. They are made fresh every day because if they are allowed to become cold and dry they are not so nice to eat.

The women are very busy people. Every other day at least they have to go to one of the clearings to dig up and fetch the roots, and every day to grate, prepare and bake bread which is their chief food. They have to make new graters when old ones are worn out, to twist cord from fibre, weave baskets and make all the other things that are wanted.

When the men are hunting or clearing the forest cassava may be almost the only food, but other kinds of things are eaten besides those grown in the clearings. In the river are turtles and many kinds of fish which are taken in different ways. They may be shot with arrows, as in Fig. 5, trapped in weirs or nets or caught by lines. When the men go out on the river to travel or fish they use a canoe that is made out of a single tree. The trunk is hollowed out with fire and axe and the sides

forced apart by the cross-benches. The canoes are very thick in the middle in order not to be broken amongst the rocks and rapids of the streams. The paddles are about three feet long and have oval blades.

In the forests are birds, wild pigs and tapirs which are good to eat. They are shot with bows and arrows and blowguns. The blowgun is a kind of giant peashooter, a very long narrow pipe as you can see in Fig. 6. Through this the Indian blows a poisoned arrow that quickly kills any bird or animal that it hits. The arrows are carried in a wicker quiver well covered with pitch at the lower end so that it can be turned upside down in wet weather to keep the arrows dry. The meat from tapirs and wild pigs, if dried for three days over a slow fire, will keep for a month.

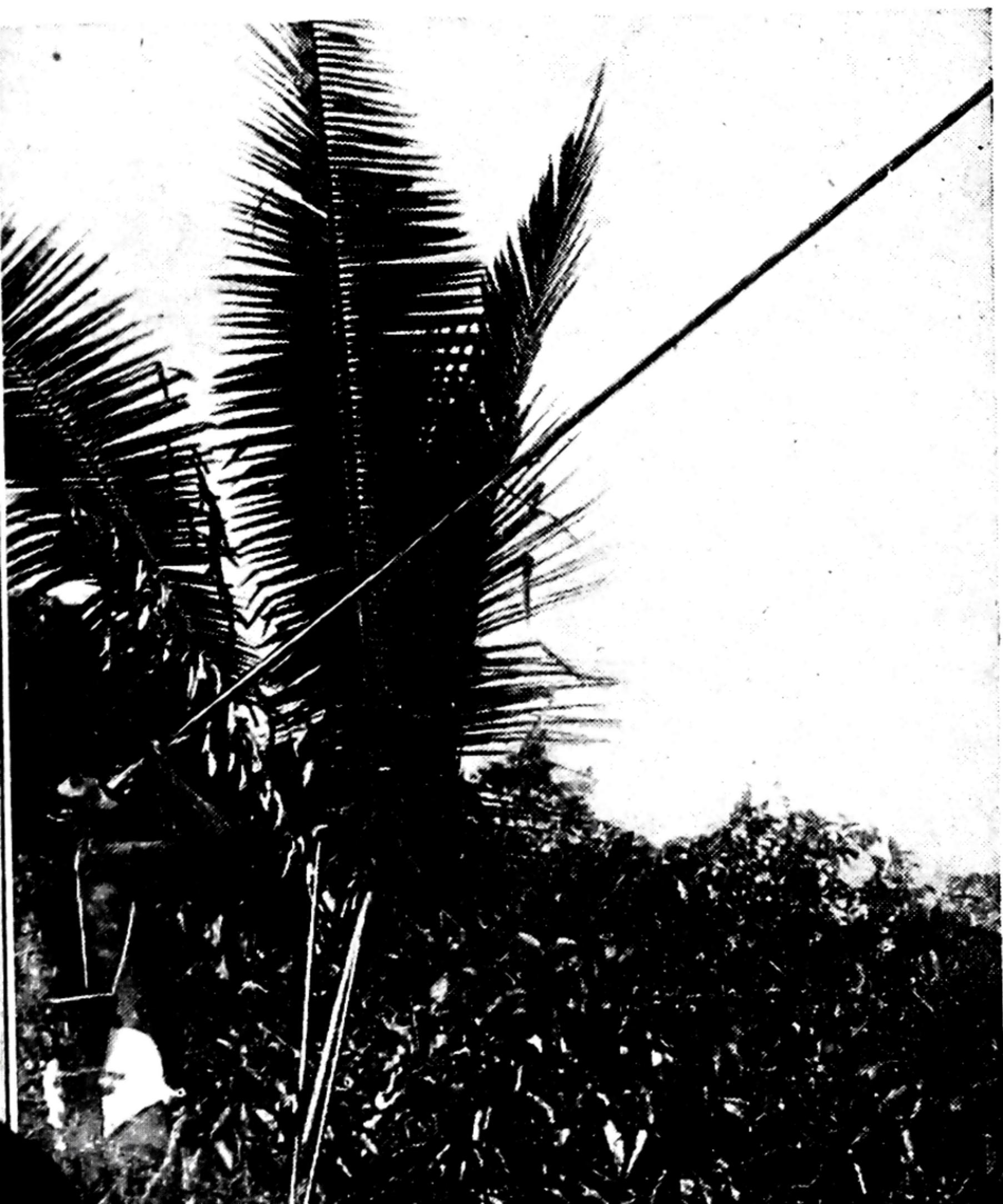
Where it is so hot all the year round clothing is a nuisance and not much is worn as is seen in the pictures.

Not all the people in the Amazon forests live in quite the same way as the Maiongongs. Some have smaller houses or arrange them differently. Some sleep in string hammocks, some do not. Some are merely wandering hunters or fishers, perhaps even cannibals. Some have learned to settle down and grow food like the Maiongongs; a few live in lonely huts and gather rubber for the white man. But nowhere in all the Amazon forest is there a town, except a few like Manaos or Para, built by white men, and even in these the roads end abruptly immediately outside them.

Perhaps you may think because everything grows so quickly in the hot damp air of the Amazon forests, and because it is not necessary to spend a lot of money on clothes or

FIG. 6.—An Indian with his Blowgun

[Shepstone



houses, that therefore the people have very easy lives. But this is not so.

In the first place the weather is too hot. We know that on a warm day in summer we do not feel like working very hard. We grumble and say "It's too hot to breathe." Well it is much worse in the Amazon forest, and as there is a great deal of low, swampy land there is also much sickness.

Then, as we have seen, there are the snakes and the biting insects, and no roads except on the water. Nothing can be bought from a shop. What the people need they must make for themselves or go without. If they become ill, as they often do, they have no doctors or hospitals.

In fact life is so hard that if the people were not really very clever, in their own way, they could not live in the forest at all. Until quite lately they had no metal tools or weapons. Everything they used was made of stone, horn, bone or wood. Out of the things that grew near to them they built houses, boats and furniture. They provided their own food and, even if they dug the field with nothing but a stick, they grew enough to eat. And all the time, in heat and rain, they fought the forest that was trying to swallow them up.

WORK TO BE DONE

1. Name two uses that the Maiongongs make of the trunks of tall forest trees.
2. Name two uses they make of leaves.
3. What kinds of clothes are worn? Why?
4. Where does the water come from that fills the Amazon and its tributaries?
5. What time of the year is very dry?
6. How is it that the Indians find it more convenient to go in canoes than on roads?
7. Do the Maiongongs take shelter from sunshine? If so, how?
8. Name as many things as you can, made of wood, that the Maiongongs use.

FIG. 7.—The only Trees on the Driest Part of the Pampa are those round Estancias

CHAPTER II

THE PAMPA

1. *On a map of South America find Argentina.*
2. *On a map of Argentina find each of the following as you come to them in this chapter: Buenos Aires, La Plata, Santa Fé, Rosario, pampa, R. Parana, Uruguay, Monte Video, Bahia Blanca, Andes.*

IMAGINE that we have come by steamer to the great city of Buenos Aires, the capital and chief port of Argentina. The broad river on whose banks it stands is the River Plate or La Plata. We are going to visit an *estancia*, or cattle ranch, about 75 miles north of Santa Fé. We can go from Buenos Aires to Santa Fé either by the railway or by the boat on the river. We choose the railway because the land route is much shorter than that by the winding river, and is also much quicker. The train will take us through Rosario, as far as Santa Fé, but on reaching the latter town we shall have to drive to the ranch by motor car.

During most of the journey, both in the train and the car, we pass over the wide open plain or *pampa*, as it is here called. The pampa is so level that when rain falls it is difficult for the water to drain away. The water remains, forming marshy ground and deep mud holes on the roads. When, however, the hot summer comes the land quickly dries.

Near swampy ground grows the tall, feathery pampas grass. In between the water-pools the land was at one time covered



[G.P.A.]

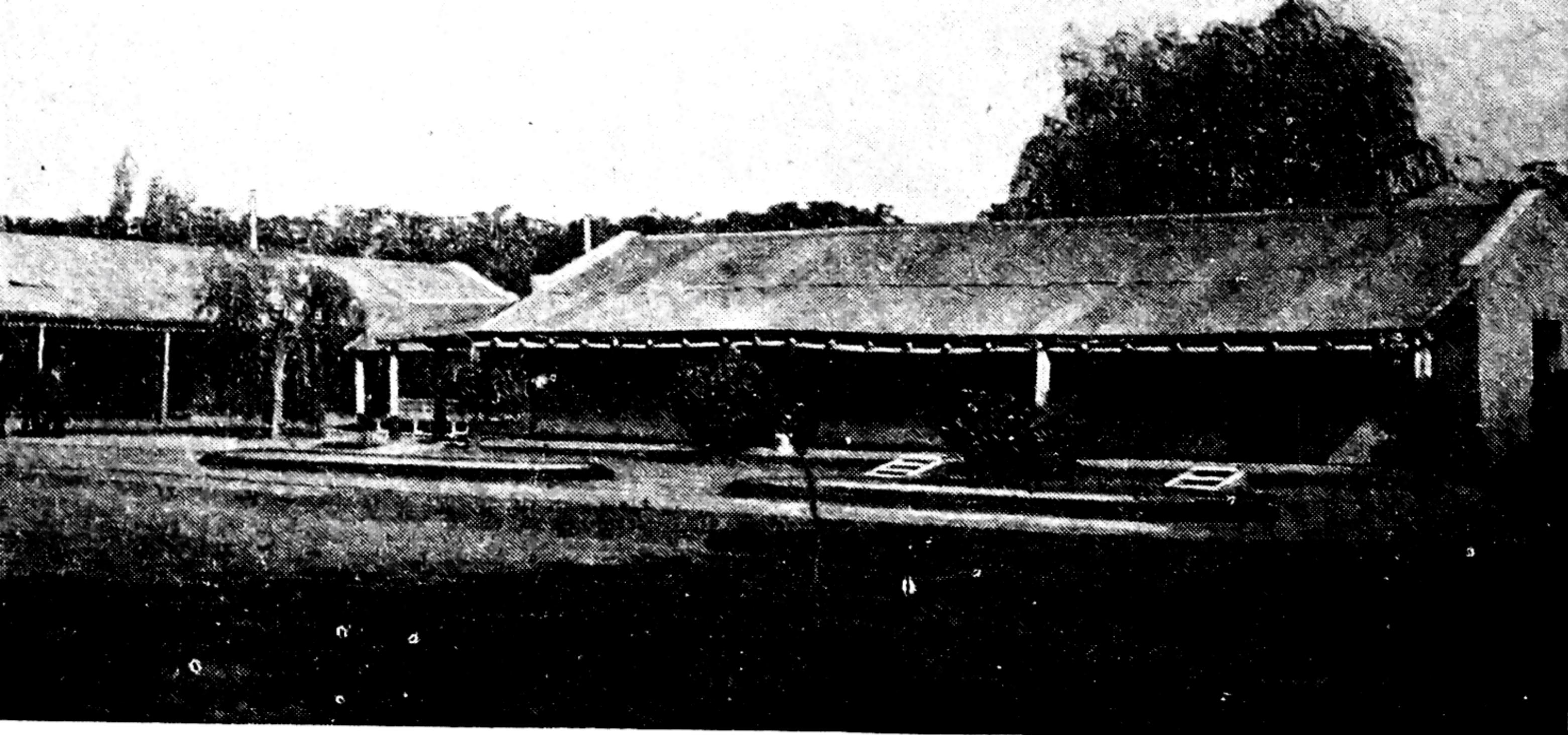
FIG. 8.—Cattle on the Pampa

They are not usually close together ; here they have been rounded up

with hard, wiry “bunch grass.” But when the Spanish settlers brought cattle into the country, the cattle ate or tramped down the “bunch grass” after which a low, soft, green grass, such as is found in England, took its place. Later on, settlers discovered that a plant called *alfalfa* was suited to these dry, sandy plains. It has a long root that goes deep down to where there is plenty of moisture so that it grows in abundance. To-day, there are green pastures, first of soft green grass near the coast and then of *alfalfa* for nearly 300 miles inland from Buenos Aires.

On the pastures we see thousands of cattle, sheep and horses peacefully feeding, not close together as in the picture (Fig. 8) but scattered about as they are in an English meadow. Here and there are houses and other buildings surrounded and sheltered by clumps of trees that someone has planted : they rise like little islands in a sea of green.

Our ride in the car is a very bumpy one. The road, which runs between wire fences, is wide enough but the surface is bad. There are no stones in the vast plains of Argentina with which to make firm, solid roads. After heavy rains the roads are deep in mud ; the car may sink to its axles and have to be pulled out by oxen. During the dry weather they are full of ruts, and the mud is turned into choking, blinding dust. Many of the older farm wagons have wheels from 8 to 10 feet



[By courtesy of Bovril, Ltd.]

FIG. 9.—La Novia Estancia

in height to keep their axles clear of the ground. We do not see many of these now as their place is being taken by powerful motor lorries.

As we near the end of our long drive we reach a well-kept road that leads to the houses of the manager of the ranch and the work-people and to a number of other buildings. Soon the twinkling electric lights of the house shine out in the distance ; the electricity is made on the ranch itself. There in Fig. 9 is La Novia estancia set amongst the trees. The buildings are long, but only one-storey high. They are made of bricks of mud and straw but are quite solid, for the mixture of mud and straw sets very hard. The house has coloured walls, a corrugated-iron roof, tiled floor, large, clean, airy rooms and a veranda to give shade. All the year round, during the daytime the air is warm ; sometimes it is hot. Doors and windows are fitted with wire-netting to keep out flies and mosquitoes.

Close at hand are the carpenter's shop, the blacksmith's shop, the meat house, barns and sheds, and the houses for the *gauchos*, or cowboys, and for the farm labourers. There are also one or more tall windmills that pump water from wells for the use of the cattle and of the people who live on the ranch. The windmills are of light galvanised-steel and can be put up in a few days. Because there is always a wind stirring over these vast level pampa the windmills can always be at work



[By courtesy of Bovril, Ltd.]

FIG. 10.—Cattle in Paddocks

when they are needed. But though there is a fair amount of rain there is no water to waste and pumping is stopped from time to time.

The cowboys and other farm labourers live in long, large, airy sheds roofed with corrugated-iron and lit with electric light like the big house of the manager. These sheds are divided into rooms but have one large kitchen where a huge wood fire burns on the hearth.

The land belonging to the estancia, or ranch, stretches away from it for long distances. Most of it is covered with grass on which the cattle feed but there are also some low trees scattered about. You can see some of these in Figs. 10 and 12. In Fig. 10 you can also see some of the wire fences which divide the land into great fields or *paddocks*, some of which may cover many square miles. Nearer at hand are the smaller yards, or *corrals* (see Fig. 12), where the cattle are herded when, for any purpose, they have to be collected together.

Most of the cowboys, or *gauchos*, are partly the descendants of Indians who were here before the Spaniards came. You can see some of them on our ranch in Fig. 11. They wear broad brimmed hats to shield them from the sun, broad leather belts with two or three pockets for money, watches and other small things, loose baggy trousers, fastened at the ankles and usually a pocket handkerchief round the neck. The handkerchief is

often used to cover nose and mouth in order to prevent the wearer from swallowing the dust that is raised in clouds when huge herds of cattle pass over the sun-baked ground. The gaucho also carries a big sheath knife, 18 inches long. This has many uses from cutting meat at meals to skinning dead animals on the pampa.

The gaucho is a clever horseman, for he spends most of his life on horseback. The ranch we are visiting, like most of the others in Argentina, is so big, and the distances from one place to another are so great that everybody simply must have a horse : it would be impossible to cover the ground on foot. There are men on horseback in all but two of the pictures in this chapter. It is said that the cattle are so used to seeing men on horses that they are frightened by the sight of one on foot. The saddles are like bundles of skins and cloths. The stirrups are often flat wooden plates with a hole so small that the whole of the foot cannot be put into it : this makes it easy for the rider to free his foot from the stirrup if he be thrown.

In the old days, before there were any wire fences, the gaucho spent most of his time riding about looking after the cattle. The modern gaucho has many other duties besides that. He has to make roads, dig wells, build stacks, drive and mind machinery and windmills and keep miles of wire fences in order. But he is still a cowboy more than anything else. He rides almost every day to some of the paddocks to see whether any of the beasts are not looking well and from time to time he has to play his part in collecting or rounding them up.

Cattle are collected in order that the calves may be branded, or marked with the owner's mark, to be dipped, or perhaps, to pick out those that are to be sold. Let us go out with the gauchos to see a "round-up" for the purpose of branding the calves. We shall have to be early risers. The gauchos are called at two in the morning and are off by three. At first slowly, then at a fast trot, they follow the road. By half-past five it is beginning to get light, and they have gone perhaps



[By courtesy of Bovril, Lt.

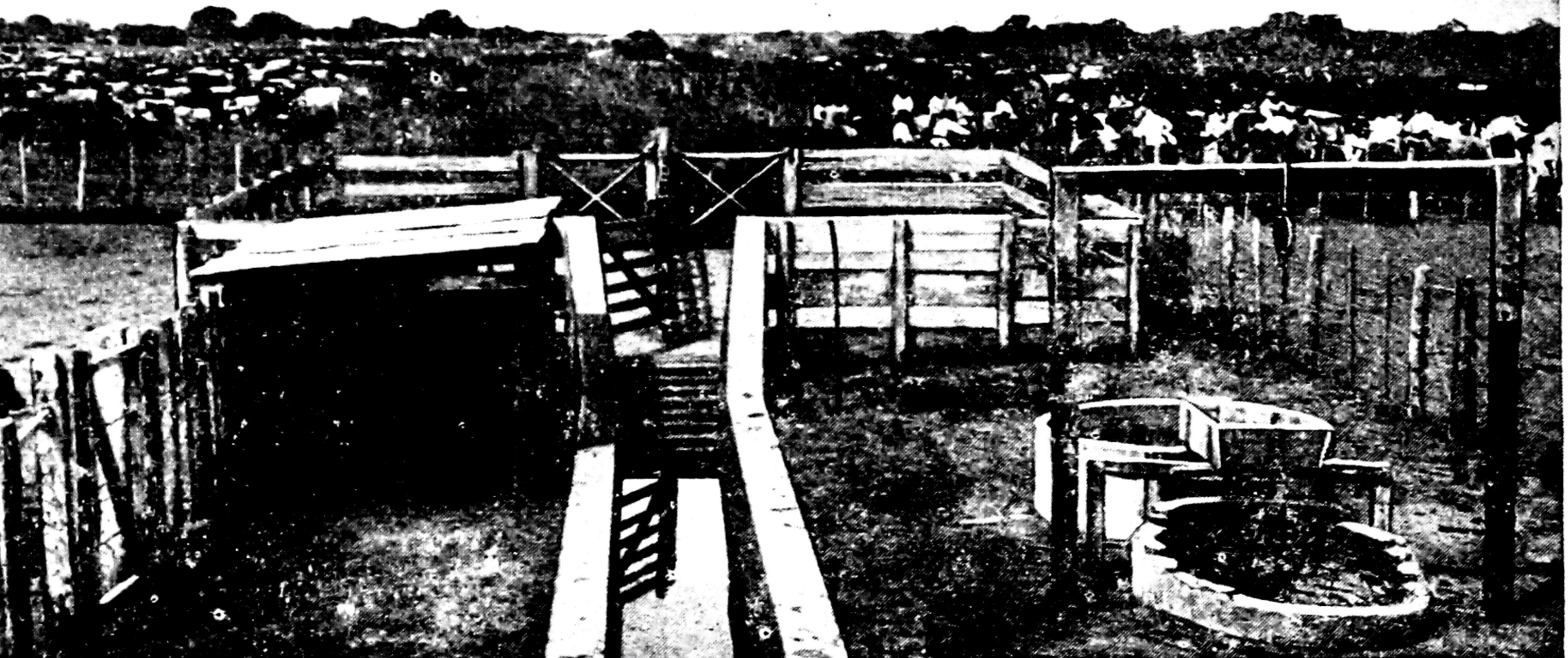
FIG. II.—Cowboys, or Gauchos, at the Estancia

12 miles, passing through one gate after another as they enter the different paddocks. At last they reach a small field, and, having brought a number of spare horses with them, quickly change horses.

Beyond the small field lies the huge paddock where they are going to round up the cattle. In this paddock they split up into small parties, each of which takes a different direction. Going at a good pace they soon reach the boundary. Here they all scatter and begin to drive the cattle, in small groups, towards the gate in the corner of the paddock. When the whole herd has been collected, it contains as many as 2000 cows most of whom have with them calves whose ages are from five to ten months.

The gauchos leave some of their number to hold up the herd whilst the rest pass through the gate with the cattle following them. A man on horseback on each side of the gate stops the cattle from going too quickly or from hurting themselves against the gateposts. Near the gate sit the manager and the foreman, still and silent, counting the animals.

When all the beasts are through, the gauchos begin to drive the cattle forward. In front are two men in charge of the spare horses : they have also to stop the leaders of the mob from going too fast. On either side of the mob, and at some little distance from each other, ride some of the gauchos to prevent



[By courtesy of Bovril, Ltd.]

FIG. 12.—Cattle in Corrals
A Trough for Washing Cattle is in the Foreground

the cattle from bolting or spreading out too far, whilst, at the back of the mob, the rest of the men urge on the slower animals.

About mid-day they arrive at a large corral or enclosure where a windmill pumps water for the drinking troughs. They drive the cattle into the corral, unsaddle and wash the horses and then think about a meal. This meal has been prepared by one of the gauchos who has gone on in advance. By the time the rest arrive he has a good fire ready and on a big iron grid several huge pieces of meat are being roasted. All sit down on the sheep skins of their saddles and drink *maté*, a kind of tea, till the meal is cooked. They then take out their big knives, and, holding the meat in the left hand, carve off a piece. They grip one end of this with their teeth, cut it off near their lips and chew what is left in the mouth. There are no forks. It is a greasy business but the taste of the meat is more delicious than that of any cooked in ovens. When the mid-day meal is over they rest, and sleep for a while, but as soon as it is a little cooler they saddle up again and begin work. The calves are separated from the cows and branded, an operation that may take two days. When all the calves are branded, the gauchos drive the herd slowly back to the paddocks.

Sometimes the cattle are collected to be dipped in a nasty-looking, nasty-smelling mixture that kills ticks, which bore

into the skin, and other pests and prevents disease. The dipping trough, made of concrete, is seen in Fig. 12. The cattle are driven down to the trough, jump into the mixture, swim through it and then go up the steps and out through the gate at the other end. This gate can be swung from one side to the other, so that some cattle pass to the left and others to the right into one or other of the smaller pens before going out into the larger corrals beyond. Calves do not like being branded but all the cattle like being dipped. They know that it stops the ticks from worrying them.

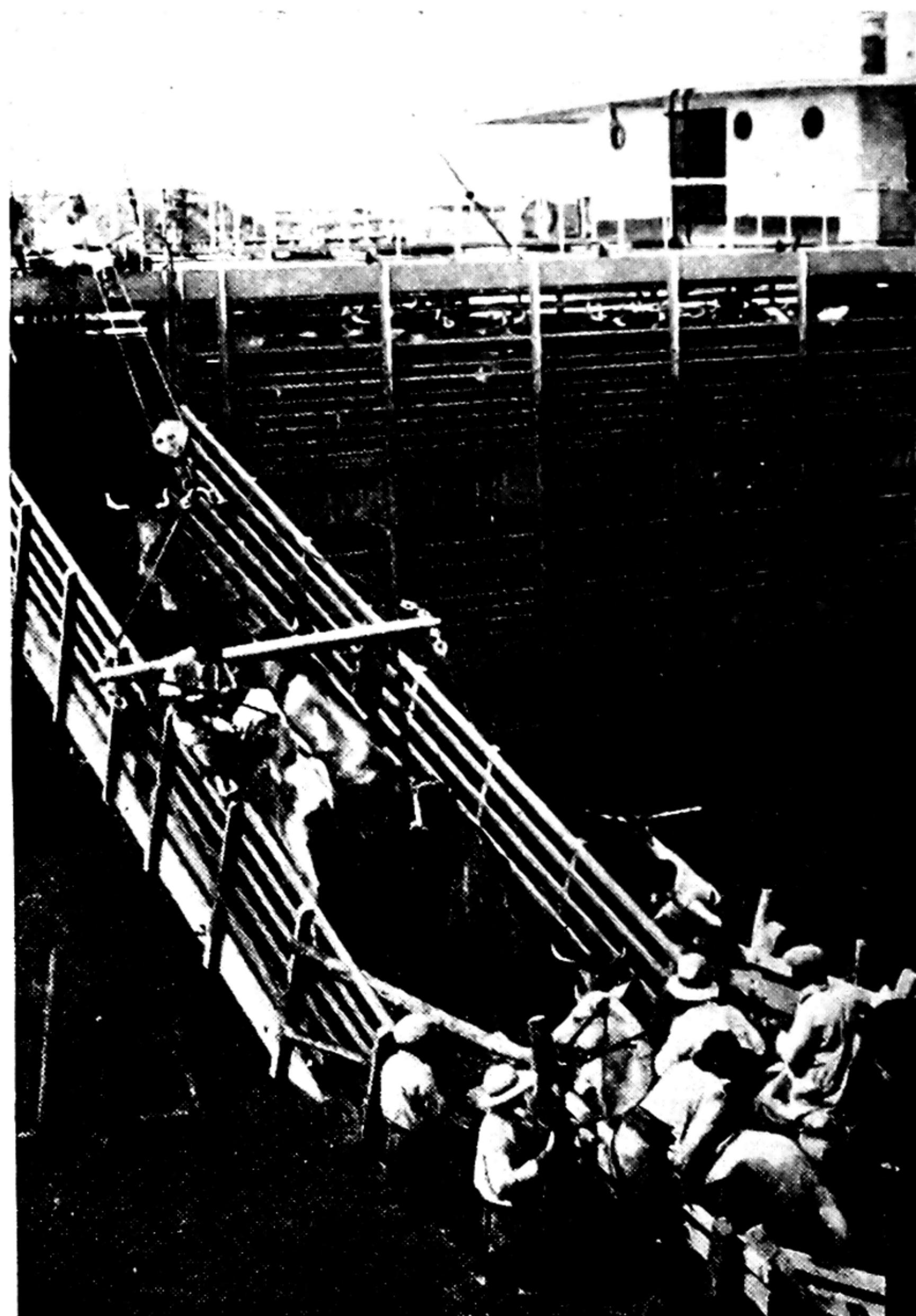
The cattle are also rounded up when they have to be sent away from the ranch. The cheapest way of transporting them is by water. They are driven to the side of the river Parana, which is not far from La Novia, and carried in specially built boats. Part of one of these vessels with two decks for the cattle is seen in Fig. 13. The picture was taken in March when the river was in flood, and the gangway had to be so steeply sloped that it was difficult for the cattle to scramble on board. The man sitting above the entrance is keeping count of the number.

The cattle are taken to big buildings in the large ports where they are quickly and painlessly killed. The meat is then sent to Europe on ships in which there are chambers that can be kept very cold, so that it is quite fresh and fit for food when it reaches the distant market.

The cattle also come to us as corned beef and tinned tongue, and in extracts such as Liebig's extract, Oxo and Bovril. In the clean, airy factories where these things are made as many as

FIG. 13.—Cattle entering a Cattle Boat

[By courtesy of Bovril, Ltd.]





[Associated Press

FIG. 14.—Reaping Wheat

a quarter of a million beasts have been killed for food in a single year.

Argentina and Uruguay together form one of the great meat-producing regions of the world. The chief ports from which the meat and the meat products are exported are Buenos Aires and Monte Video.

Much of the middle of Argentina is very much like the country round La Novia, though some of the parts are drier and it may be cold and frosty in the early morning. The ranches too are much the same but in some of the poorer ones the houses of the cowboys are mud huts with only two rooms and the roof, which is of thatch, is full of holes ; these holes do not bother them very much because in the hot summer, which is the rainy time of the year, the water dries up quickly. Nearer the ports of Buenos Aires and Bahia Blanca wheat is grown. The wheat is harvested in December and January, which is summer time in Argentina. In Fig. 14 is a part of the plains to the west of Buenos Aires, covered with ripe wheat ; on the left among the trees are the farm buildings. Great machines, drawn by many horses, strip the ears of wheat from their stalks and separate the chaff from the grain, which pours in a steady stream into bags waiting for it.

The north is warmer and wetter and sugar is grown. In

the very south it is much colder ; and sheep are reared instead of cattle.

In the west there are the high mountains of the Andes.

In these different parts of Argentina there are different ways of living but it is easy to see that life in any one of them must be very different from what it is in the forests of the Amazon. In the days before the white man came, even the Indians of the pampa, the Charruas, were stronger in mind and body than their brothers in the forest, and now white men live on the pampa in ways that are very much more pleasant and healthy than those possible in the lands of which we spoke in the last chapter.

WORK TO BE DONE

1. Is it warmer or colder on the pampa than near the Amazon ?
2. Is there more, or less, rain on the pampa than near the Amazon ? Why do you think so ?
3. Which is the warmer part of Argentina, north or south ? How do you know ?
4. In what months is there most rain ?
5. Name two kinds of vegetation seen in the pictures in this chapter.
6. Why are trees planted round the ranches ?
7. What difficulty is there in making roads on the pampa ?
8. What building materials are used for walls of houses ? Can you think of a reason for this ?
9. How do you know from the way houses are built that it is warm at La Novia ?
10. Name the things which the gauchos wear that tell of the climate.
11. What are the winter months in Argentina ? Write out the sentence in this chapter that tells you.

CHAPTER III

SOMETHING TO DRINK

COFFEE AND COCOA

On a map of South America find each of the following as you come to them in this chapter : Rio de Janeiro, Santos, San Paulo, Ecuador, Guayaquil, Quito and the Andes.

LET us return to Buenos Aires and sail thence to the south-east of Brazil. We shall not go as far as Rio de Janeiro, the capital and chief port and so shall miss one of the finest harbours in the world. This harbour has a very narrow entrance—at one point only 1500 yards across—but inside it is 19 miles wide. We, however, are bound not for Rio but for Santos, the chief coffee port, where we may suppose that we arrive at the beginning of August.

Santos is on a small island and the port, which is 3 miles from the open sea, is reached by a winding channel. As we step ashore, we shall see so many sacks of coffee that we cannot help wondering whence it all comes and where it goes. Brazil produces four-fifths of the coffee used in the whole of the world and most of this is exported from Santos. It reaches the port in sacks by means of four-wheeled wagons, each drawn by six horses, by motor lorry and by rail. As it arrives, the sacks are carried on the heads or shoulders of the dock labourers to one of the many big warehouses that line the waterside for a distance of 3 or 4 miles. All day long, and at this time of year all night long, as well, we see men carrying sacks either into the warehouses or out to the ships that lie alongside the wharves.

Some of the sacks are taken from the warehouses to the

dock yards by carts or trucks. There they are dropped through traps in the streets on to endless rubber belts which carry them first one way and then another till they fall from the last one into the hold of the ship without being handled by man since leaving the wagon in which they were brought to the wharf. In some years as many as thirteen to fifteen million bags are handled.

From Santos we take the train to San Paulo, the capital of the State of San Paulo, up on the healthy higher land. It is so much higher that at one place the railway climbs 2500 feet in 6 miles and so steep that the trains are pulled up by cable. Here, the nights are cool and in the early morning we might even see hoar-frost on the ground though it is warm enough during the day and in summer is quite hot.

San Paulo is a handsome city but it is not a city that we have come so far to visit. We are on our way to a coffee plantation in a State that grows nearly half the world's supply of coffee. To reach this plantation, or *fazenda*, as it is called, we take another train. But we do not have to wait till we arrive at the plantation to see coffee trees; the railway seems to run through an endless forest of them. We pass by single houses, and through villages and towns, but all are set amongst coffee trees that thrust their glossy, dark-green branches, loaded with clusters of ripe golden-red berries, almost into the carriage windows. At the stations there are no unpleasant noises: the people, workers and masters, men and women, are soft-spoken gentle folk who do not raise their voices to disturb the stillness of the air.

The coffee bushes or trees are grown from seeds which are planted under the shade of other trees. After about eighteen months or two years when they have grown some leaves they are tenderly set out in bamboo baskets, three to a basket. Later they are put into the ground in long rows 8 or 12 feet apart and form vast plantations. Some of the plantations are enormous; plantations with 300,000 or 400,000 trees



[By courtesy of San Paulo (Brazilian) Rly. Co., Ltd.

FIG. 15.—Gathering Coffee Berries

are common and one plantation has more than 4,000,000 trees.

Well ! here we are at the Fazenda Palmeiras where the berries are now being picked. The trees, unlike most fruit trees, bloom for several months in the spring, from September to December. Inside the white blossoms the berries appear and grow all through the wet summer and we now see them being gathered ; picking has indeed been going on ever since May, when the rain stopped. The ground is now dry, in fact so dry that the bright red soil is very dusty and our shoes and clothes soon look as if they had been sprinkled with red pepper.

To prepare for the picking the ground has been cleared of all weeds. Not that there are ever many, for the plantations are kept free of growth other than coffee. Twigs and branches that have fallen are also taken away and nothing is left to interfere with the gathering of all the fruit that is on the trees or falls to the ground.

The method of picking is to strip all the coffee from the tree by hand and let it fall, either on to sheets or direct on to the ground. In Fig. 15 you see some bare-footed women at work. Two women are raking up berries, leaves and dirt. Two others have round wire sieves in which the mixture of berries

and rubbish is placed. The women throw this mixture into the air. The wind blows the leaves and twigs away, much of the dirt goes through the sieve and the berries are caught in the sieve as they fall again. They are then bagged, weighed and taken to the factories and drying grounds.

Now look at the view in Fig. 16. In the background are the forests of coffee trees extending far into the distance. The trees are planted in regular rows and very carefully looked after. The country, though high, is what is called "rolling"; it is not flat but there are no mountains, only flattish hills. The really steep part is where the railway climbs from Santos to San Paulo.

In a little valley in the background some of the workers live in houses with the evergreen coffee trees right at their doors.

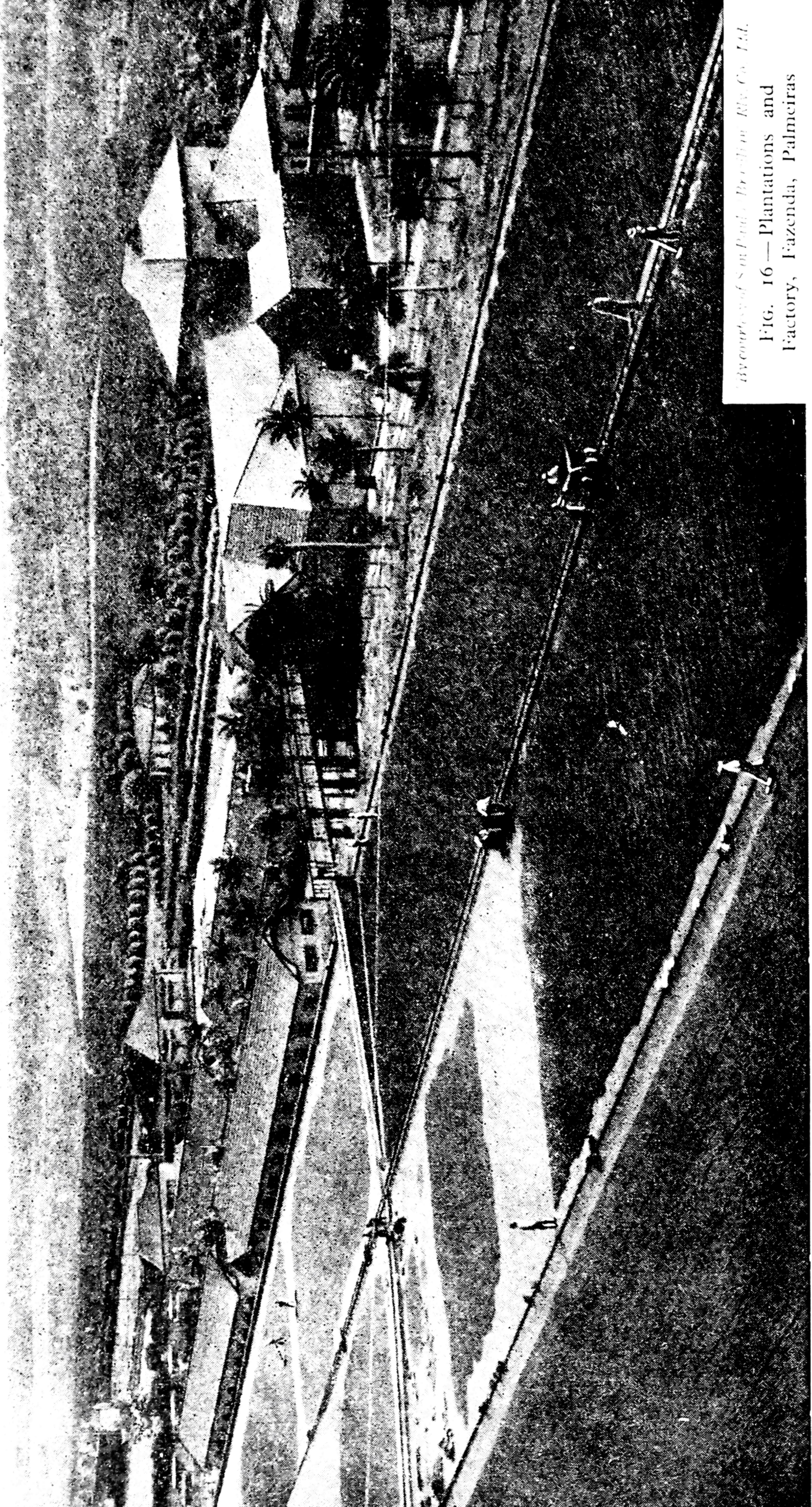
In each coffee berry there are two seeds or beans. These are separated from the outer covering in the building on the right. Here also the beans are washed, and those of different sizes, weights and qualities are separated from each other. They are then taken to the great brick-covered drying grounds that are seen in the middle. These grounds are carefully swept before the beans are spread on them. Look at them and try to think of the enormous number of beans at this fazenda alone.

Another part of the drying ground is seen in Fig. 17. In the background are seen some of the workers' cottages; they are small, one storey high and whitewashed. This is the dry season when not much rain falls so the beans are dried out of doors but sometimes they are raked into heaps at night. They are frequently stirred and turned by a wooden instrument which men push in front of them through the layers of beans. This is the cause of the curious markings, like ripples. When the beans are dry they are sorted into different grades and sent away, as we have seen, to Santos.

In Fig. 18 is seen a view of the fazenda as a whole, including the views seen in the last two pictures. On the left of the

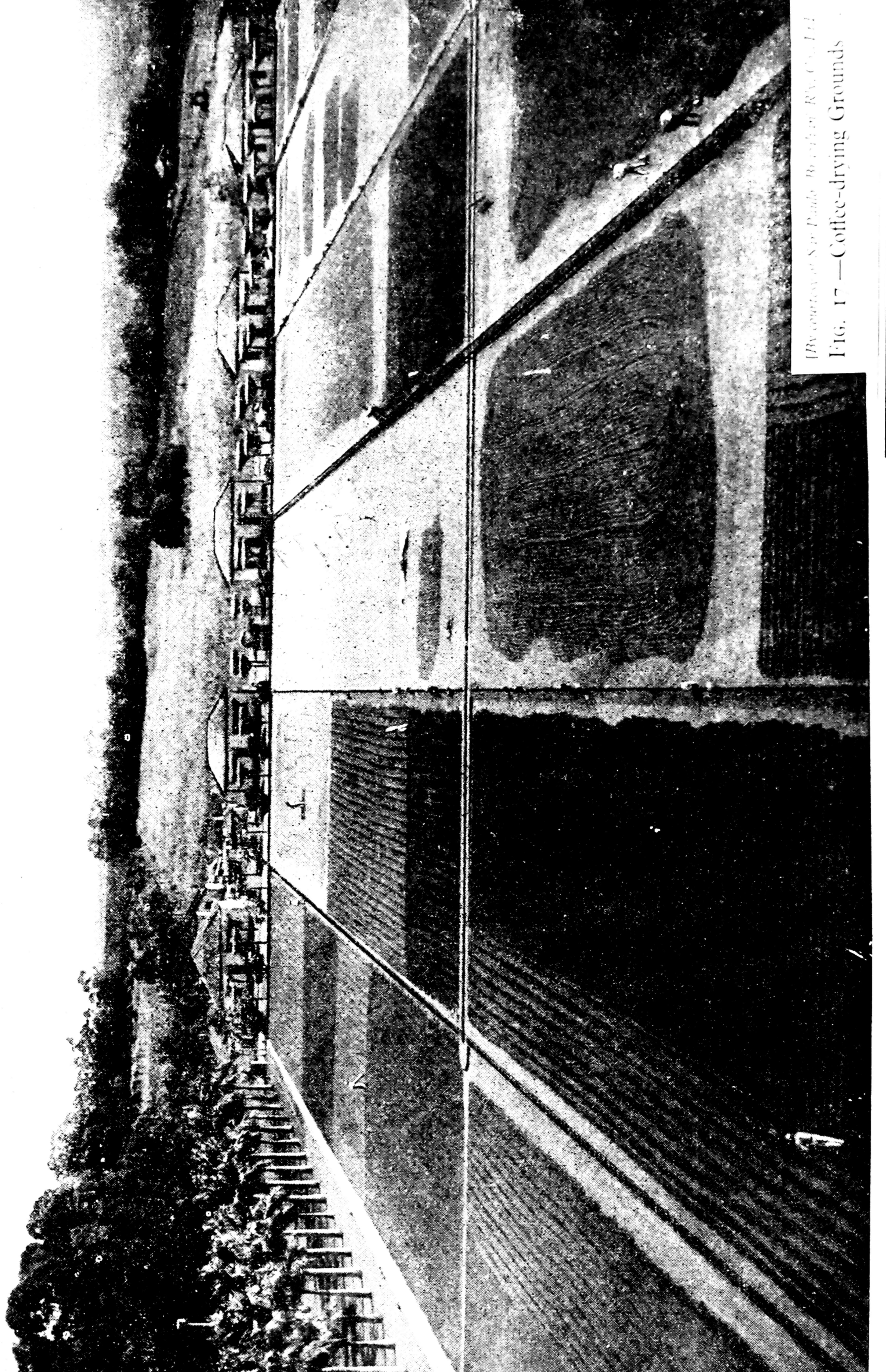
By courtesy of Sun Pulp, Division, R.R. Co., I.M.

FIG. 16.—Plantations and
Factory, Fazenda, Palmeiras



[By courtesy of Sir Paul Revere Ltd.]

FIG. 17.—Coffee-drying Grounds



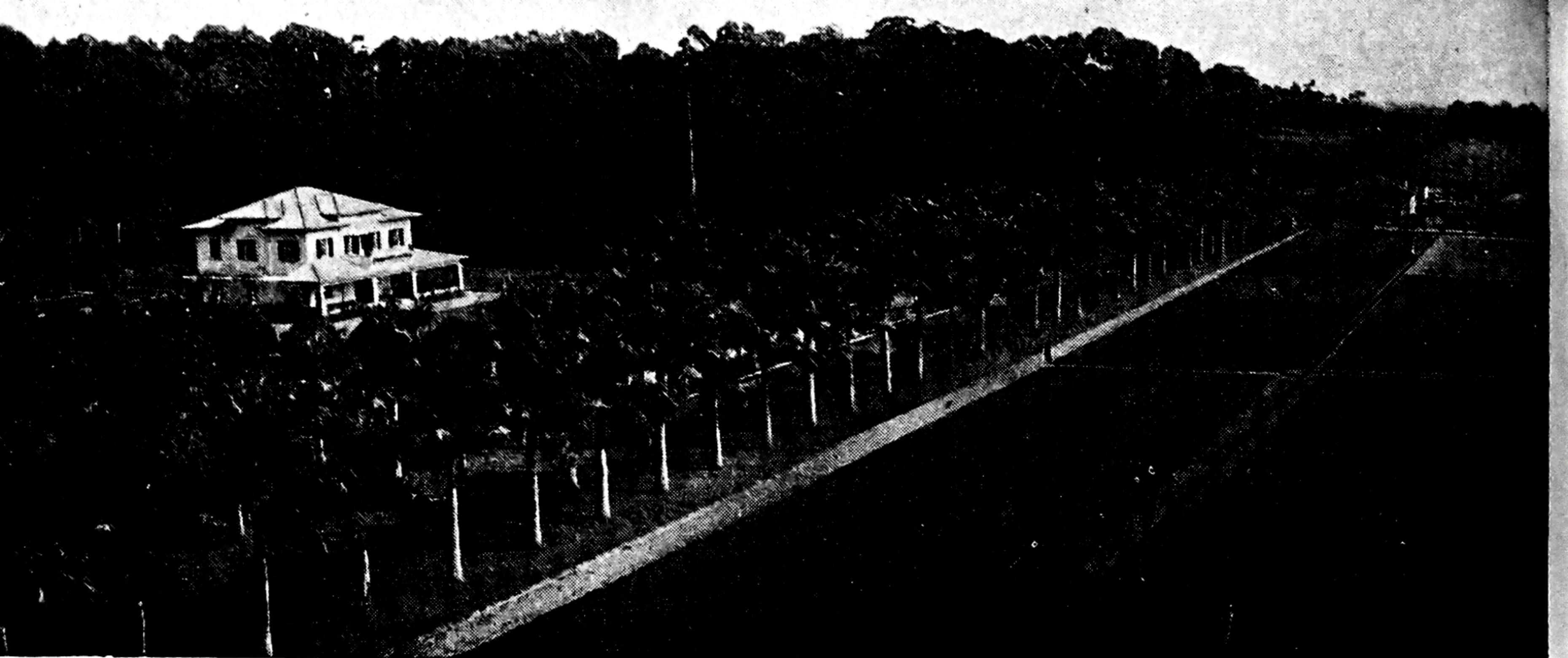
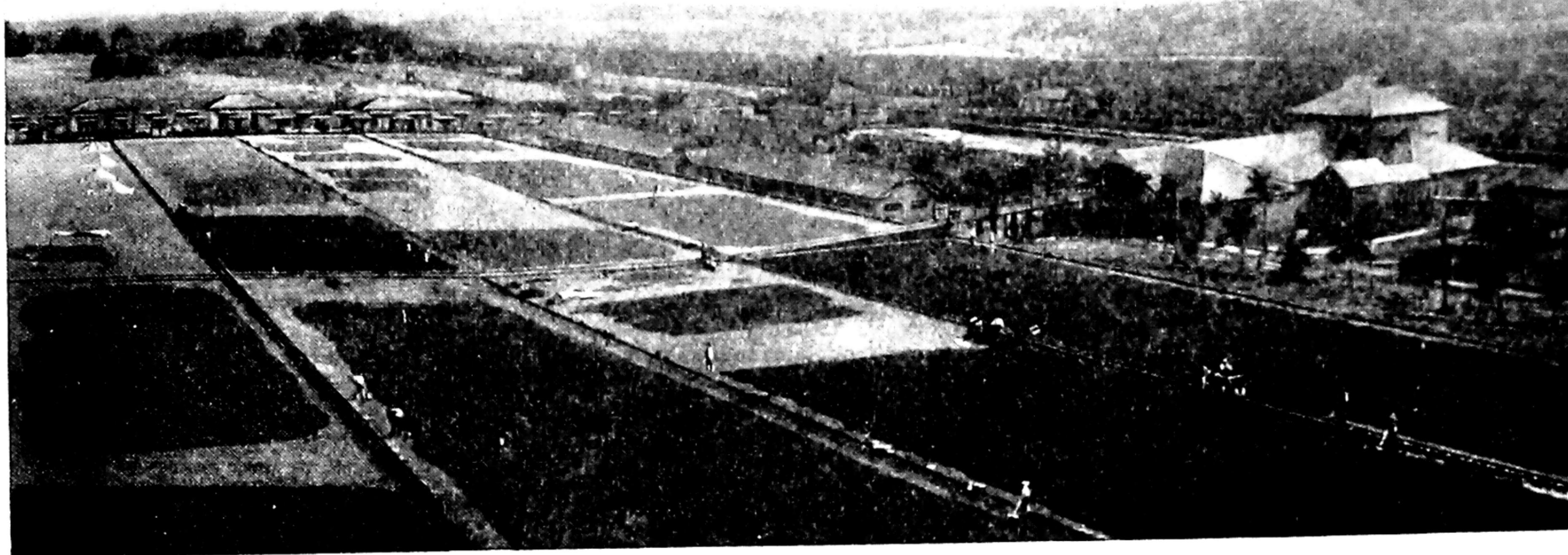


FIG. 18.—View of the

drying ground is the house of the owner of the estate, Dr. Elyseu Teixeira de Camargo. Behind it is a bit of the old forest that grew here before it was cut down to make room for the coffee trees ; coffee grows best in such places because the soil contains much leaf mould. In other parts of Brazil, as in other lands, some of the old forest trees are left standing or rubber or banana trees are planted in order to give shade but here that is not necessary. Round the house are beautiful grounds, gay with flowers ; in front are rows of palms. Notice too, the veranda which gives shelter from the sun and the windows with lattice shutters which also keep out strong sunshine.

This is a very different land from the Amazon lowlands or the pampa of Argentina, but not all Brazil is like this. Brazil is so large that there are many differences between the different parts of it though it is everywhere warm all the year round. Here, in the south-east, however, it is somewhat cooler and here most of the people live.

We have now learned something about coffee. But perhaps we do not all like coffee and may want to hear about something else. What about cocoa ? Cocoa needs more heat and moisture than coffee and to find the country in South America that grows most cocoa, we must go to another land—Ecuador.



[By courtesy of San Paulo (Brazilian) Rly. Co., Ltd.]

Fazenda Palmeiras

We land at Guayaquil, the chief port of the country. It stands on a wide deep river, 30 miles from its mouth. At one time Guayaquil was a very unhealthy place for the lowland on which it was built was always flooded in the rainy season. In recent years much of the lowland has been drained and Guayaquil is more healthy than it was. There is, however, still much swampy land on the outskirts of the city.

The modern part of Guayaquil contains many fine buildings and handsome houses in stone and concrete but on the outskirts the houses are made of mud and of strips of bamboo nailed on posts. In the one seen in Fig. 19 the top part sticks out to give a shady passage underneath. Houses of light wood and mud are very suitable in countries like those of the Andes, where earthquakes are very common. If they fall they do not do much damage.

One end of Guayaquil is, as it were, nothing but cocoa. On the quays by the waterside there are thousands of bags of cocoa beans, hundreds of men carrying such bags to the warehouses and scores of offices of people who buy and sell cocoa, while the air is full of the sweet, sickly smell of the beans. And in the streets, as you see, cocoa beans are spread by means of a wooden shovel, either on a waterproof sheet as in Fig. 19, or even on the bare ground, as in Fig. 21, to dry in the open air. When the man with the shovel in Fig. 21 has finished

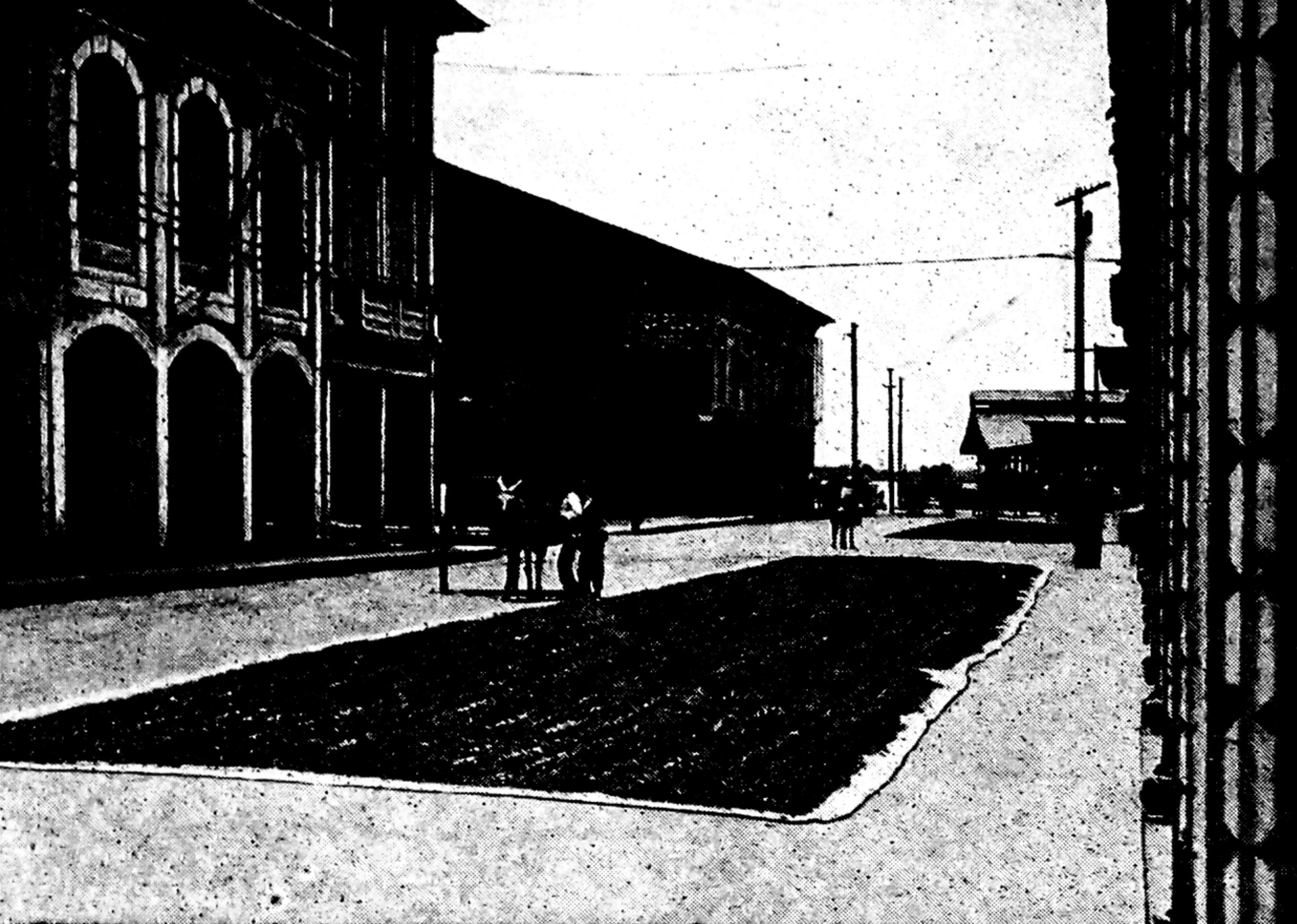


FIG. 19.—Cocoa Beans in the Street, Guayaquil

[G.P.A.]

his task, bare-footed negroes will slowly shuffle up and down all day turning over the beans with their feet. Cocoa is the most important export of Ecuador.

To reach the plantation we take a motor boat and go up the river. Along the banks are houses of split bamboo, like that in Fig. 20, thatched with leaves and built on poles ; in the water are crocodiles and masses of floating weeds ; on the water are bamboo rafts and many kinds of boats. At last we reach a plantation of cacao trees, Fig. 22 ; these trees produce cocoa.

Once upon a time, all the land around us was covered with thick forest but the low bushes and the smaller trees have been cut down and burned. The big trees, however, have been allowed to stand in order to shelter the young plants from the wind and to shade them from the fierce rays of the sun.

Cocoa seeds, like coffee seeds, are sown in a "nursery" but as soon as the seedlings are strong enough they are planted out. When full grown the trees are about as big as apple trees.

When they are about four or five years old, they begin to bear little pale pink and yellow flowers which are found not only on the branches but also sticking straight out from the trunks of the trees. From the flowers grow pods, seen in Fig. 22, that are red, purple, yellow or green. Each pod contains from 50 to 100 seeds or beans. The cacao tree, like the

FIG. 20.—A
Hut built of
Bamboo

It is raised from
the ground and
has a veranda

[Photo: E. Young]



coffee tree, is an evergreen, and flowers and pods, ripe and unripe, can often be seen on the same tree, side by side.

The pods hang from the branches and the trunks of the trees by little stems each about an inch long. They can be picked nearly all the year round, so that it does not matter much what time we visit the plantation but the chief harvests in Ecuador are in June and December. The cocoa pods are cut off the tree by men naked to the waist whose brown bodies gleam in the sunshine as if they had been oiled. The lowest pods are removed with a big knife or cutlass; those high up are reached by means of a long light pole.

When the pods fall to the ground they are picked up and put in baskets which are carried on the head to some place where they are emptied into one big heap. Round this heap sit the workers. The men slash the pods open with their knives and the women, with a wooden spoon, scoop out the beans. At this time the beans, which are about as big as almonds, are pink, not brown, and are bitter to the taste. They are next spread out on the ground or on trays first to ferment and then to dry. When they are dry they are packed



FIG. 21.—Spreading
Cocoa Beans with a
Shovel in the Street,
Guayaquil

[Photo: E. Young]



FIG. 22.—A Cocoa Plantation
[C.P.A.]

in bags and sent somewhere or other to be ground up and made into cocoa.

Although Ecuador is much smaller than Brazil it has many more ways of making a living, some of which are easily seen as we go by rail from Guayaquil, the chief port, to Quito, the capital. For the first 50 miles of our journey we pass through reed-covered swamps, dotted with bamboo huts on poles, pasture lands where cattle are grazing, fields of sugar cane, plantations of cacao and bananas and areas covered with bamboo and other trees.

Later on we reach thickly forested hills where a few clearings have been made for more bananas. The railway climbs higher and we find a cooler climate where tobacco, cotton and maize are grown. Higher still it is cool enough for wheat and for most of our common fruits and vegetables. Above this is land too cool even for farming but where a good deal of coarse grass peeps out amongst the rocks and where sheep are grazing. And high above us are parts where no one lives because here is a land of ice and everlasting snow.

When we reach Quito we are 9000 feet above the sea. Here, although the sun is nearly overhead at mid-day all the year round, the weather is never really hot. At the same time it is never really cold, though at night a blanket is needed on the bed and European visitors may wear overcoats and long for a fire. Until lately, there was, however, not a single fireplace or chimney in any house. Even now there are very few houses with fireplaces and cooking is usually done over charcoal fires.

This high land is much cooler than either the cocoa or the coffee lands and there are other parts of South America that are colder still.

WORK TO BE DONE

CHAPTER IV

CHILE

We are going to Chile

1. *On your map of South America, find Chile. By means of the scale on the map, say about how long Chile is. About how wide is it in its widest part?*
2. *On a map of Chile, or of South America, find each of the following as you come to them in this chapter : Iquique, the Andes, Santiago, the Central Valley, Valparaiso.*

CHILE is a long narrow country with great differences between its different parts. Let us first go to the north where it is warm and dry. We will land at Iquique. Outside and all round the town there is a big desert. Here no one lives and nothing grows for there is very seldom any rain. As there is nothing to eat it is not surprising that we do not see a single house amongst the sands.

We tramp into the town, only a few minutes away, and here we find a railway station and a train about to start. We take the train, crawl up the bare hills and near the top turn inland through a little valley. The fact that we are in a train means that there must be somebody somewhere. Yet when we have passed through the valley and come out on to the rather level land beyond, we still find nothing growing and nobody living.

After a time, however, we see a tall chimney (Fig. 23) and to the right of it a number of low white houses and we ask ourselves what are people doing up here in this wilderness. They are working in mines.

This desert contains great quantities of a substance called



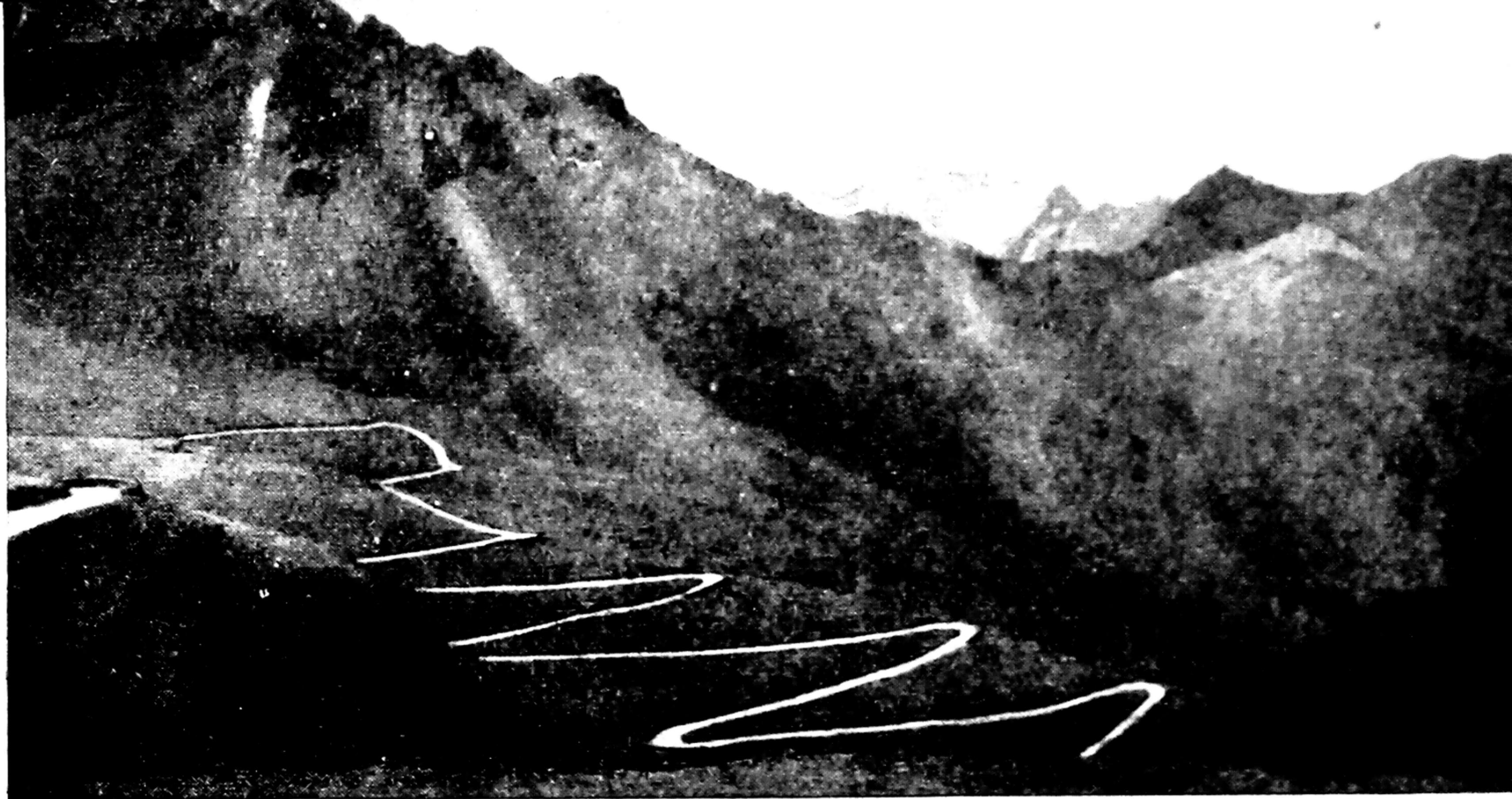
[Photo : E. Young]

FIG. 23.—A Nitrate Oficina

nitrate. This is used as a fertilizer for plants. At one time, all the world went to Chile for nitrate because it contained the biggest and the purest supplies. To-day the Chilean nitrate is not as important as it was and many of the works and houses have been left to go to ruin. But there is still a big export and still a few thousands of people living at the different *oficinas*, that is, at the places where the nitrate is mined and manufactured.

The mines are more like ditches than pits. The beds of nitrate lie near the surface but not on the top. They are broken up by explosives in holes bored in the ground. All the rough untidy-looking land seen in the front of Fig. 23 has been broken up in this way. The lumps of nitrate are taken to the oficina where they are crushed and put in great tanks. In these tanks the nitrate is boiled till the water can dissolve no more. The solution is then drawn off and allowed to cool when the nitrate appears in crystals that look like rock-salt. The crystals are dried and sent by rail to Iquique, either in bags or, as we send coal, in open wagons.

A great deal of water is needed and as there is none in the desert it is all brought in pipes from the Andes on the east. Because it is so difficult to obtain, it is used over and over again.



[L.N.A.]

FIG. 24.—A Road across the Andes

Everything at the oficina has, like the water, to be brought a long way. All food, materials for houses, clothes and machinery comes to Iquique by sea. Yet in another oficina, about 20 miles away from this one, there are as many as 2400 people with their own church, cinema, theatre and school.

In the *east* of Chile are the Andes. In Fig. 24 is seen one of the highest parts of these mountains covered with snow even in summer. On the lower hills in front, very little is growing. There are no trees and in winter the snow lies very deep. Even in the northern Andes, where the sun is almost overhead at mid-day, it is so cold that there is always snow at a great height. In Chile it is much colder and the snow comes lower down.

Travel in the high mountains is always difficult. The picture shows a part of the motor road from Chile into Argentina but there are very few roads in the Andes and such as there are must zig-zag in order to rise up the steep slopes. In the high Andes, as in the desert, there are very few people.

Let us go to the *south*. What is this like? In Fig. 25 is a view of one part. It shows us a lake and a mountain. The mountain is a volcano. Snow continues a long way down the side. The south of Chile is cold in the lowland as well as in the highland but, as Fig. 25 shows, it is not too cold for plants

FIG. 25.—Southern Chile



to grow. Because there is plenty of rain all the year round, there are big forests. In these forests a few people make a living by felling trees.

In places where there is grass sheep and cattle are reared, chiefly by Scottish, Swiss and German settlers.

On the map the coast is seen to be broken. There are many harbours and outlying islands. In the narrow inlets of the sea a few people make a living by fishing.

Nowhere in southern Chile are there many people. There are a few small ports and towns but there are no big cities.

There are, however, still a few tribes of Indians * who hunt an animal called the *guanaco* and a bird called the *rhea*. The *guanaco* is half a sheep and half a camel. It can live where the pasture is poor. It provides the hunters with most of what they need. Its flesh gives them meat, its skin gives them clothes, its bones are made into tools, its sinews are used for the strings of bows and its hoofs, with a part of the skin attached, are made into boots.

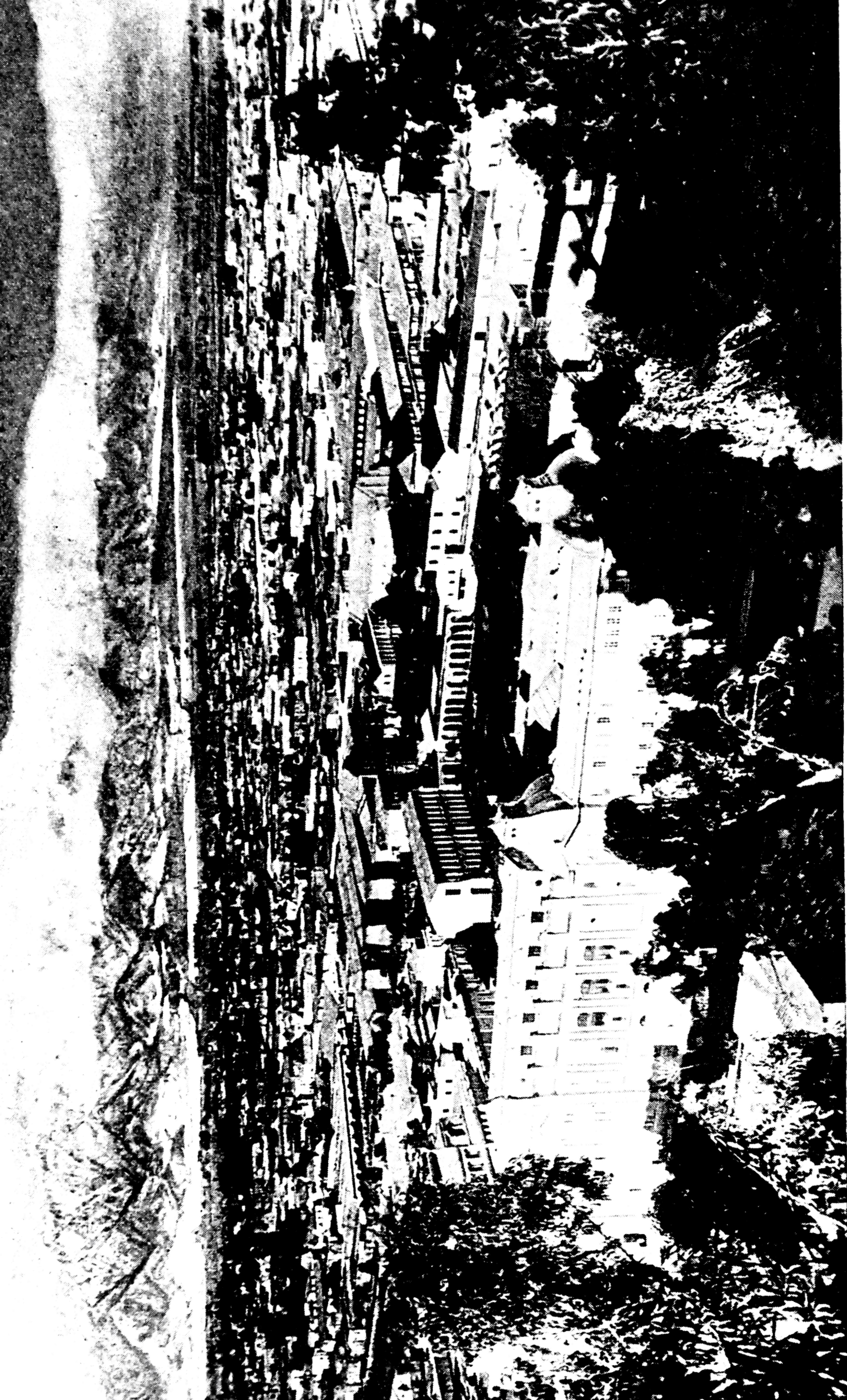
The *rhea* is a kind of ostrich which lives where the grass is tall and there are lakes of water. Its flesh and eggs are eaten. The feathers are worn in the hair as ornaments.

As the hunting peoples are always on the move, they need a home that can easily be carried, that is, some kind of tent. The tent is made of *guanaco* skins sewn together and fitted over a framework of poles. Because the wind nearly always blows from the west, the tent is set with the open end towards the east. In front of the wide open doorway, several stakes are driven into the ground. To these, skins are fastened to form a kind of screen to keep out any winds that, from time to time, may come from the east.

So far, we have not seen places in Chile where there are many people. But look at Fig. 26, a view of the big city, Santiago, the capital. "Santiago", like Buenos Aires and many

* E.g. the Tehuelches or Patagonian Indians.

FIG. 26.—Santiago



other places in Argentina, is a Spanish word ; it means " St. James." Spanish names, which are found over a great part of South America, remind us that it is chiefly to the Spaniards that South America owes its white people.

The Spaniards brought with them Spanish ways of living, many traces of which still remain. It is true that the public buildings of Santiago are not Spanish in style but the churches are Spanish and many of the houses are built after a Spanish fashion. These houses have a central courtyard open to the sky, heavy entrance doors to the courtyards, barred windows next the streets and rather flat roofs. Many of them have verandas to give shade from the sun.

Santiago is high enough to be cool and healthy even in summer. It is, however, so warm in the middle of the summer day that most folk take a nap in the afternoons and many of the shops are closed. Some of the chief streets have arcades so that one may walk or shop out of the heat of the sun. On the other hand it is so cool in the short winter that frost is known. Very few of the houses have any stoves or fireplaces because they are so seldom needed. If a cold spell comes, a small electric stove may be used. People without electric stoves simply wear warmer or extra clothes ; if they have no extra clothes they just shiver.

In the picture (Fig. 26) it is seen that Santiago lies in a wide valley with mountains beyond. This valley, which is very long, is the important part of Chile. Most of the people in Chile live, not in the north, south or east but in this valley which is called " the garden of South America." On one side of it are the Andes ; on the other is a range of mountains that shuts it off from the sea.

The greater part of the fertile land belongs to a few rich farmers who live on great estates or *estancias*. Let us visit one not far from Santiago. The house is one-storey high and rather rambling. If our visit were in autumn, we should see marrows drying on the tiled roof and corn cobs piled in a

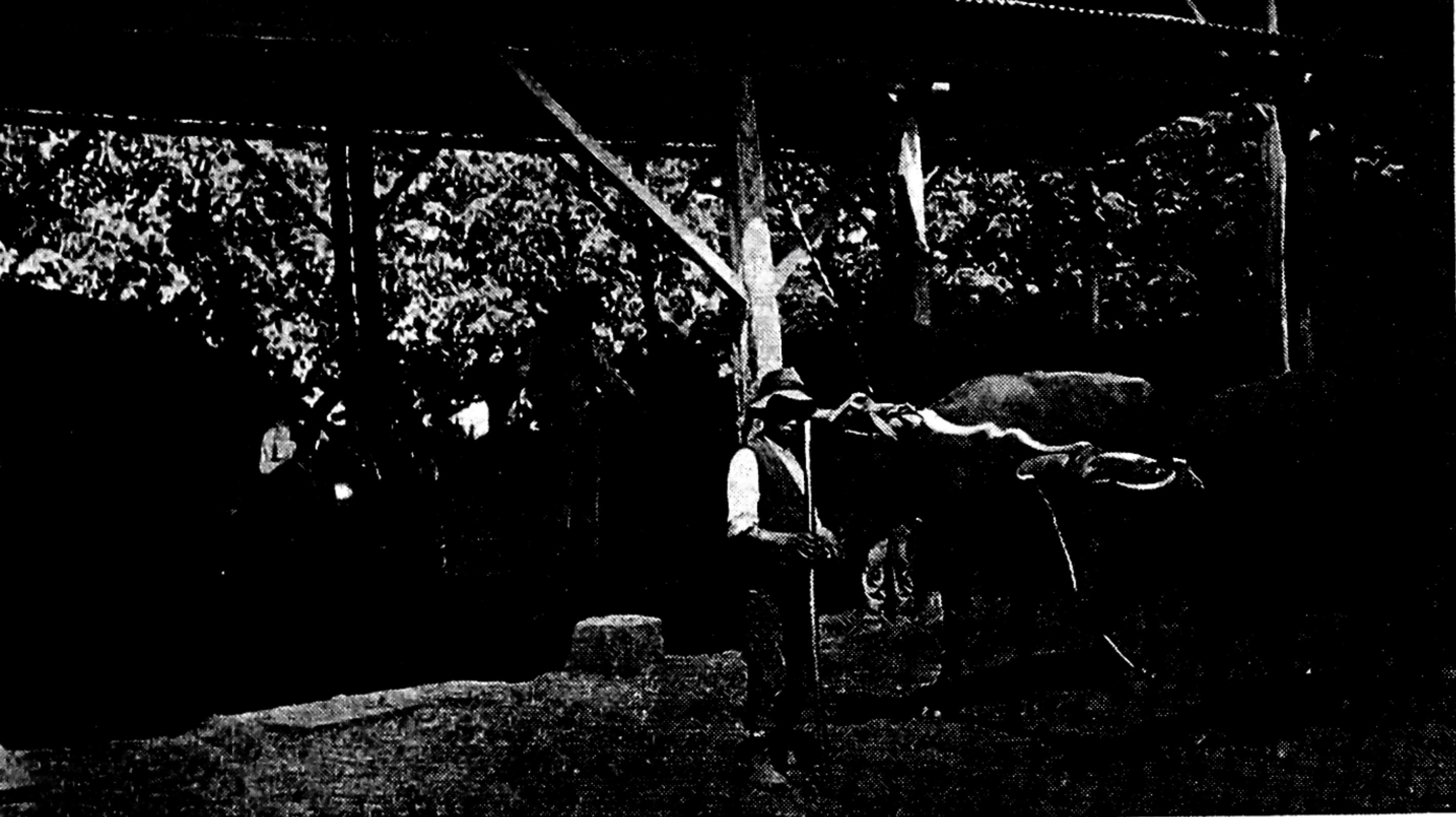


FIG. 27.—
Oxen Tread-
ing out the
Corn

[E.N.A.]

corner of the wide veranda. Inside there is much comfort. There are bits of old furniture, that have belonged to the family for a hundred years or more, that remind us of Spain from which the first white settlers came. The owner spends much of his time in the city and leaves an overseer to look after the farm but he stays here for about three months each year, riding, eating and giving parties to his friends.

The peasants, or *peons*, who do the hard work, live in huts, each of which has two rooms. The huts have a wooden framework upon which mud is plastered. When the walls are new and nicely whitewashed, they look very spick and span but the winter rain soon washes off the white and makes the mud walls very untidy. The small buildings on the farm are also made of mud but the larger ones are of wood with roofs of corrugated-iron, or of wood as in Fig. 28.

The peons are very badly paid but each has the free use of a small piece of ground on which to grow his own food. If a peon wishes to buy anything he has to do so at a shop or store that belongs to his master and to pay a high price for what he buys. Hence he is always poor.

The fields, meadows and gardens are divided from each other by walls of mud or hedges of bramble. The mud walls have tiles on the top to throw off rain and so keep them from being washed away. The estate, with its walls and hedges, looks much more cosy than the wide ranches of Argentina where the fields are divided by hundreds of miles of wire fences.

FIG. 28.—A Peon and his Wife

[E.N.A.]



On the fields are grown many of those things, like grain and fruit, that do so well in a warm dry summer. There are fields of wheat and maize, orchards of peaches and pears, gardens rich with beans, onions, tomatoes, strawberries and melons and a vineyard whose grapes make fine wines. In the dry summer, this farm, like many others, is sometimes in want of water. The melting snows of the Andes, however, feed a little river that provides both the water so badly needed to water the ground and the power to drive a machine that makes electricity.

On this large farm much machinery is now used but, in places, old-fashioned ploughs, some of wood, are still drawn by horses or oxen and it is quite common, everywhere, to see bullocks dragging carts. In Fig. 27, oxen, led by a boy, are treading out the corn on the threshing floor. Notice also the machine which the man is working. Because the summer is dry and the grass is then poor, mules and donkeys are also used for farm work ; they do not need such rich grass as horses. Horses, however, are much used, as in Argentina, when travelling from place to place. In Fig. 28 we see a woman about to ride to market on a side saddle with her husband in his dark cloak and huge hat.

The farm that we have just visited is very much like many others in this valley. The valley has some rain but not too much. It is wetter than the north but drier than the south.

It is also cooler than the north but warmer than the south. It is really a rather pleasant land in which to live, and, of all the parts of Chile, has the most farms, most people, most villages and most cities.

More fruit, grain and meat are produced in Central Chile than can be eaten by the people, and much is sent to feed those who are at work in the ports and mines of the desert north. A great deal of the fruit and vegetables goes through the Panama Canal to New York. Meat, skins and wool are exported to Europe while wheat and barley are exported both to Europe and to the other countries in South America.

These things leave Chile through the port of Valparaiso. "Valparaiso" is another Spanish name. It means "the Valley of Paradise" and was given to the central valley of Chile by the Spaniards because it was the first green land to be reached by them when they sailed south past the barren coast of the desert.

WORK TO BE DONE

1. Where is the low land in Chile? Where is the high land in Chile?
2. Write two sentences about the Andes.
3. Where are sheep reared (a) in Argentina, (b) in Chile?
4. How can you tell from the pictures that the central valley of Chile is (a) wetter than the north and drier than the south, (b) cooler than the north and warmer than the south.
5. What is the rainy time of the year in Central Chile, summer or winter?
6. What is the driest time of the year in Central Chile?
7. What is the rainy part of the year in Central Argentina?
8. What is there in Chile to show that the Spaniards came there?
9. What is the pleasantest part of Chile in which to live? Say why you think so.
10. Fill in either "rainy" or "dry" in the blanks in the following sentences. Read the previous chapters and make sure you can tell.

Summer is	in the Santos coffee district.
Summer is	in the pampa.
Summer is	in Central Chile.

What do you notice?

11. Draw a map of South America and write "summer rain" and "winter rain" in the right places.

CHAPTER V

MEXICO

1. *On a map of North America, find the following as you come to them in this chapter : Mexico, the Atlantic Ocean, the Gulf of Mexico, Vera Cruz and Mexico City.*

IN this chapter we are going to visit a village in Mexico. We sail across the Atlantic Ocean and through the Gulf of Mexico. We land at Vera Cruz but we do not stay long in this port because it is so hot. We are glad to escape the heat and the mosquitoes of Vera Cruz as soon as possible. Let us take the train.

The railway journey is quite interesting. We climb slowly ; we are continually going up-hill. As the train ascends we leave the forests that clothe the lower, wetter slopes of the mountains. In them men are felling trees and gathering rubber or, where the ground is clear, growing rice, rubber, cocoa, bananas and coconuts. As we rise, the air becomes a little cooler and we pass through fields of maize or of Indian corn, sugar cane and cotton, then through orchards of oranges, apples and cherries, vineyards and fields of wheat. Farther on and higher still are forests of trees like those of southern Chile, and then we step out of our train at Mexico City.

As we walk about the streets we notice that the people are either the descendants of the Spaniards who conquered and settled in the country or the descendants of Indians who were there before the Spaniards came, or a mixture of the two.

There are other things besides people that remind us of Spain. There is, for instance, a big Spanish cathedral and nearly all the larger houses are of Spanish pattern. The roofs are rather flat, the windows have iron bars and the rooms are

placed round a central courtyard as in Fig. 29. In the courtyard are flowers, vines and shrubs, fountains playing and birds singing. Because there are often earthquakes in Mexico many of these old houses are only one room high. A great deal of Mexico City has, however, been rebuilt on the American plan. These buildings are tall and of steel and concrete, strong enough to withstand earthquakes, and the streets are at right angles to each other.

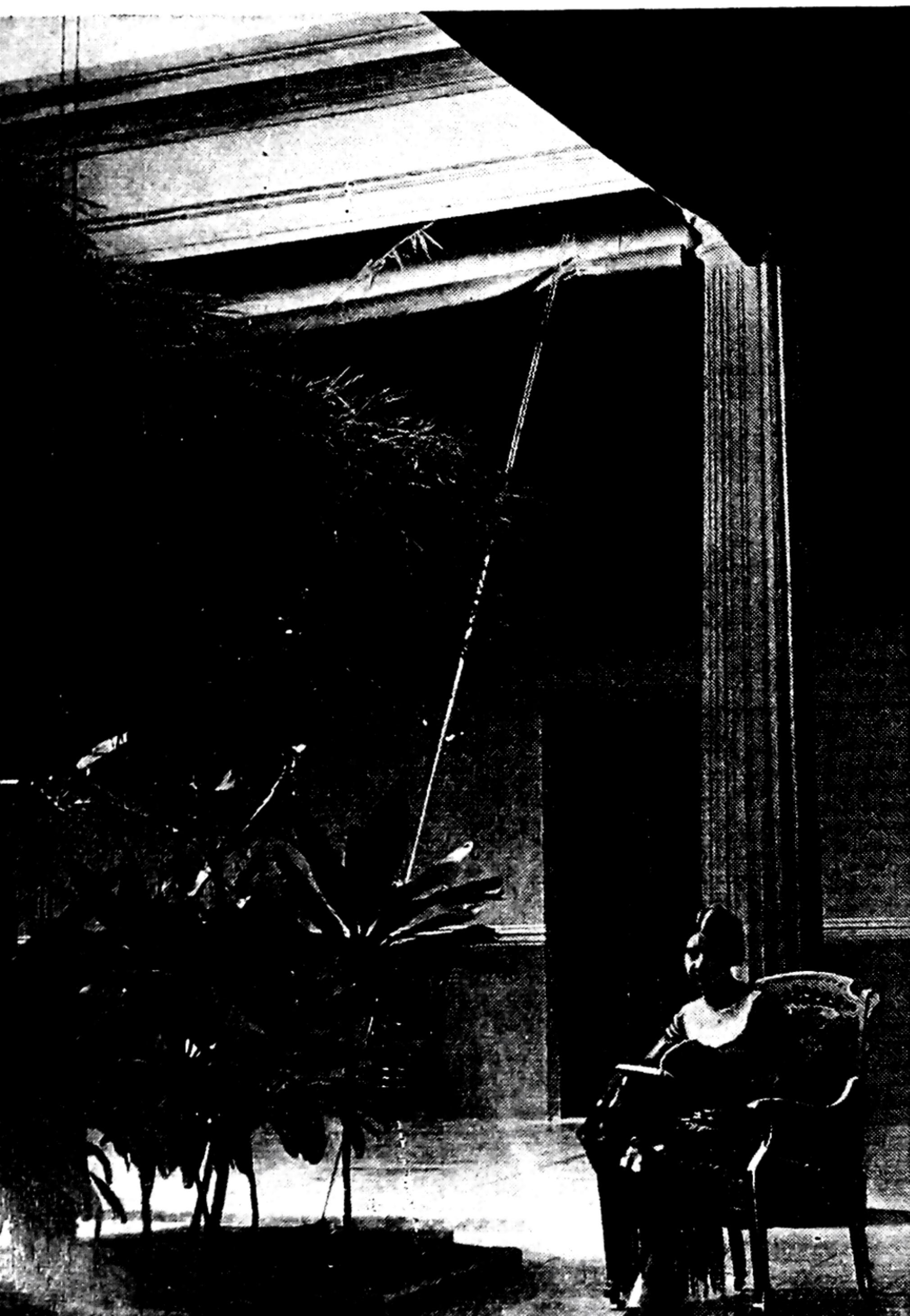
As we found by coming up in the train, it is here much cooler than on the lowlands by the coast. But it is by no means cold during the daytime. It is, in fact, so warm in the sun that shops and market-places close and all work stops from one o'clock until three every day. There are palm trees in some of the gardens and, in the fields outside the city, sugar cane can

be grown. At night, however, the air cools very rapidly and the sleeper is glad of a blanket.

When the Spaniards took the country from the Indians they divided a great deal of it up and gave enormous pieces to some of their countrymen. One man received 17,000,000 acres. Many of these large estates have since been cut up, but there are still quite a number of big farms where Spanish people live in Spanish fashion in houses of a Spanish pattern.

FIG. 29.—Part of courtyard of a Mexico City Home

[Shepstone]



The Indians, however, the descendants of those whom the Spaniards found in Mexico, continue to live in villages very much in the same way that they lived before ever the Spaniards came. We are going to visit one of these villages. It is called Magdalena Atlipac, and lies about 15 miles east of Mexico City. We shall go on horseback. We could go by motor-bus along a dusty, bumpy road, but it is more fun and

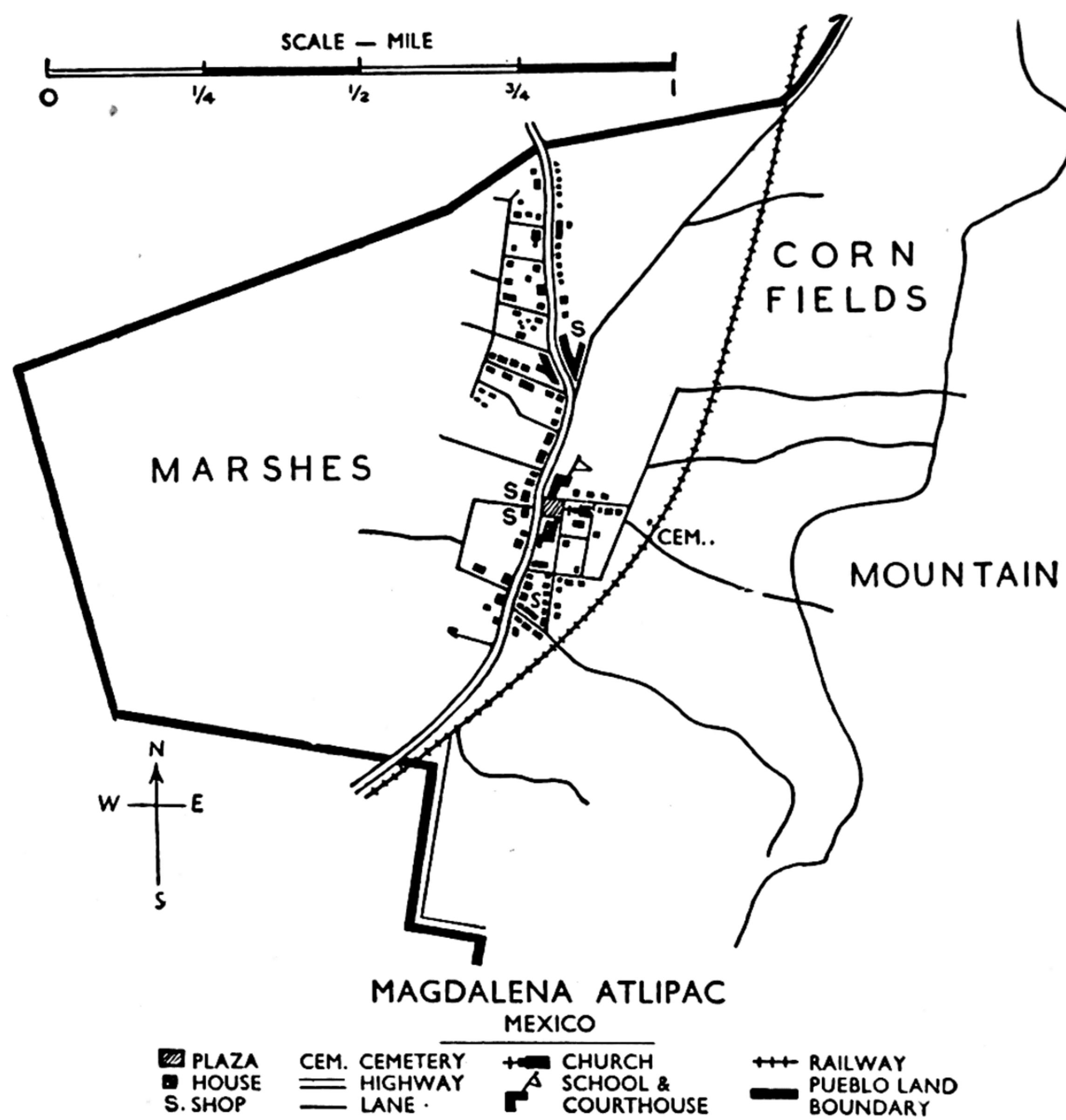


FIG. 30

more common to ride. A railway passes close to Magdalena Atlipac but there is no station; the trains pass whistling and do not stop.

The village consists of about 200 houses, most of them built, for a distance of about a mile, along a road which runs north and south, though there are a few houses in side lanes. Midway along the main road is a *plaza*, or a square, with a church



(By courtesy of Robert S. Platt)

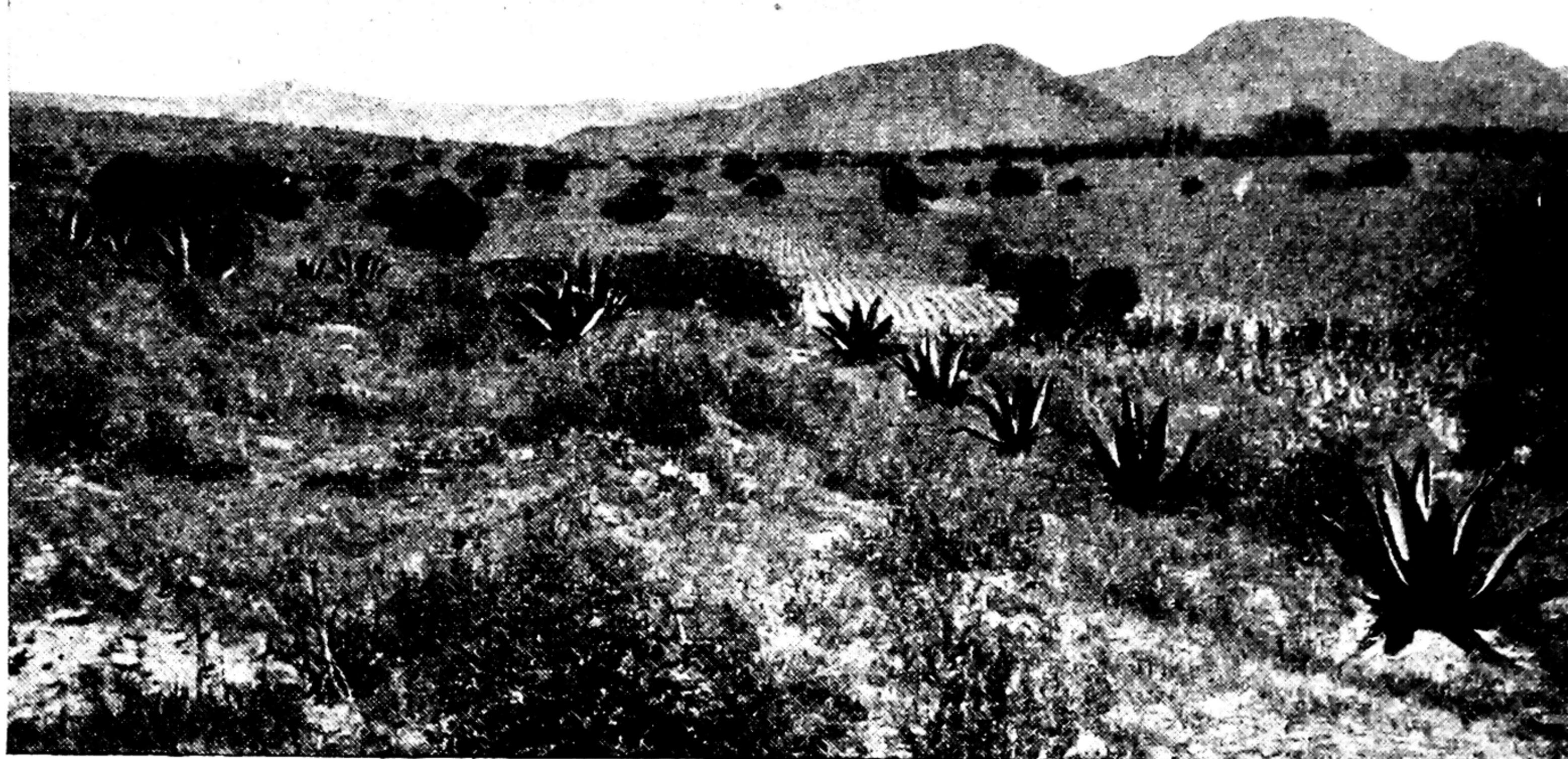
FIG. 31.—Magdalena Atlipac from the West

to the east, a school and courthouse to the north and two little shops to the north-west.

The main road, on which the village is built, runs along the foot of the mountain which lies to the east. On the west of the village are some marshes, all that is left of a lake that has been drained. A map of the village lands is shown in Fig. 30 and a picture in Fig. 31. In the front of the picture you see some of the marshes ; behind on rather drier land is a mule, some cattle grazing and some chickens. The houses of the village are amongst the trees in the middle ; the mountain is at the back.

Fig. 32 is a view of the foot of the mountain. The village is again not to be seen, but it is on the right in the trees in the distance. On the left is the steep slope of the mountain. In this picture is seen a flatter part of the land ; in Fig. 31 it is hidden by the trees round the village. It is this flatter part that is really important, for the villagers are farmers, as Mexican-Indians always have been, and these are the fields on which the people of Magdalena Atlipac grow the maize and beans on which they chiefly live.

There are no fences to separate the fields and only a few paths ; farming land is too valuable to be wasted. One can



[By courtesy of Robert S. Platt]

FIG. 32.—Mountain and Corn Lands of Magdalena Atlipac

tell where the land of one villager ends and that of another begins, only by noticing the directions of the rows in which the crops are planted.

There is a little rainfall from October to May, but, on the whole, the winter is dry and there may be frosts both then and in the early spring. In winter the land is ploughed. The plough is very old-fashioned. It is nothing but a pointed stick fastened to a pole and dragged through the ground by oxen or mules.

In April or May, corn (that is Indian corn or maize) is planted in furrows. When it has begun to grow, beans are planted in some of the fields, between the rows. As the rainy season lasts from June to September both crops have plenty of moisture while they are growing. Until the corn is too tall the land is cultivated, or loosened with the plough, as in Fig. 33. Both crops ripen about the same time and are harvested in November. They are carried, stalks and all, to the farmer's house in the village. There the corn and beans are stored for the year's food supply of the family ; the stalks and stems are stored as food for the animals in winter.

The village houses (see Figs. 34 and 35) are built of a mixture of clay and straw called *adobe*. The clay is dug out of the ground on the site of the house. It is made into bricks



FIG. 33.—Maize Cultivated with a Plough drawn by Mules. The mountain behind Magdalena Atlipac is seen in the background.

[By courtesy of Robert S. Platt

by putting it into wooden moulds and baking it in the sun. The door frames are of stone from the mountain or of bricks that have been baked in a kiln by the side of a clay pit at the north end of the village. The roofs are covered with tiles. Hardly anywhere do we see a splinter of wood in these houses. Everything comes from near at hand.

Some of the houses are whitewashed. All are small and very simple. Some of them have no windows and none of them has any chimneys. There are no fireplaces and cooking is done over charcoal burned in a brazier. Most of the houses have only one room. Inside there is not much furniture. There are things with which to grind the corn and cook the food, a huge water pot, brightly painted wooden bowls, pottery, hammocks or straw mats on which to sleep and plenty of flowers. The people are fond of colour.

Each house has an enclosure for the live stock and is set in the midst of an orchard and garden. Here are grown figs, pears, peaches, pomegranates and olives. These are the trees which prevent us from seeing the houses of the village in Figs. 31 and 32. Vegetables are also grown—tomatoes, onions,

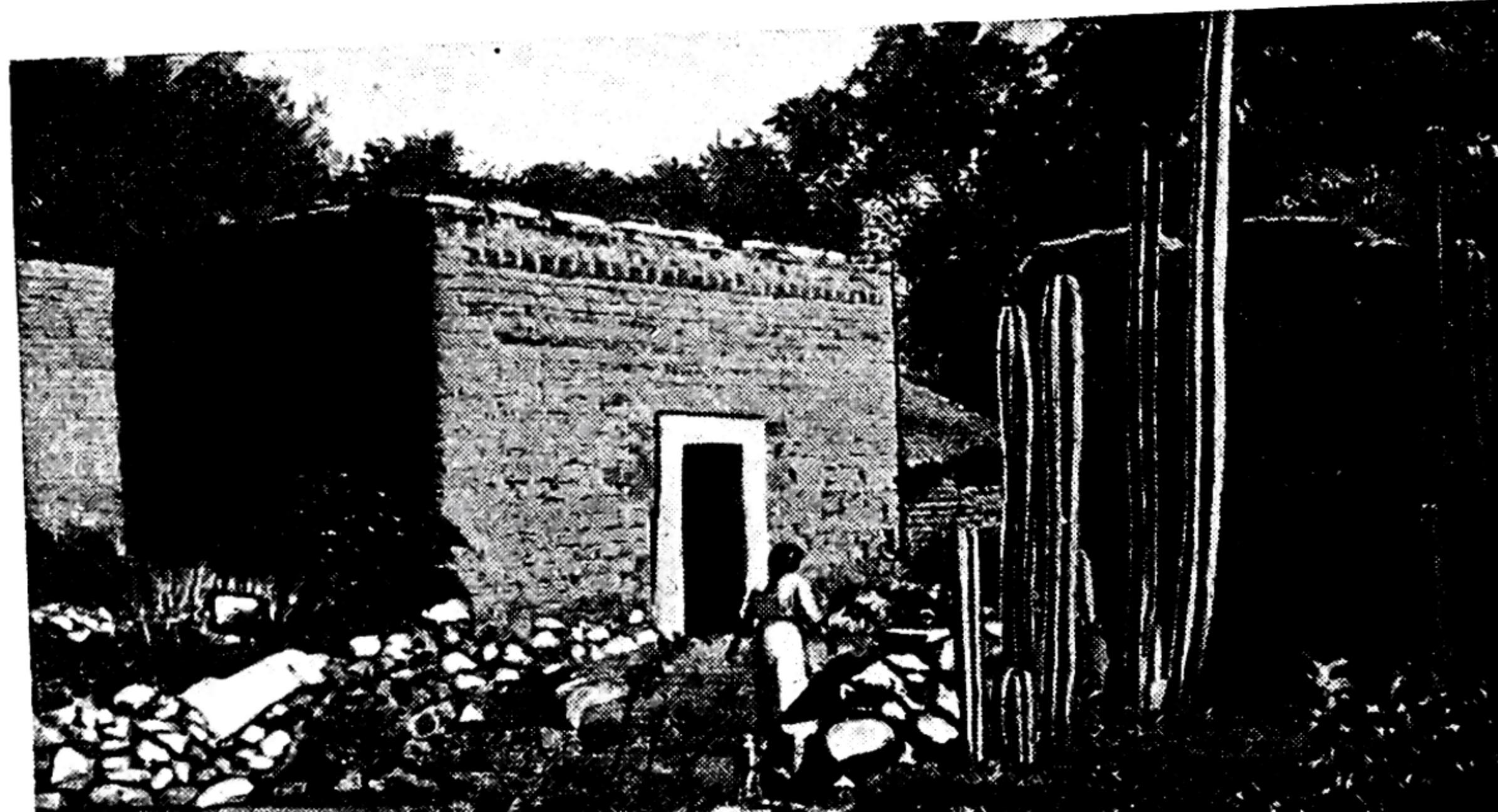


FIG. 34.—
Adobe
House :
Magdalena
Atlipac

[By courtesy of
Robert S. Platt

beet, turnips, cabbages, cauliflowers and radishes. The people of Magdalena Atlipac grow their own food, as they build their own houses, out of their own soil.

The marsh lands on the one side of the village and the mountain on the other are not very valuable, but some use is made of them. Not only is the marsh too wet for crops but it is also too salt. Water has been continually flowing from higher ground and evaporating so that the marsh land has grown salter and salter ; in places, it is so salty that nothing will grow even when it dries. The men of the village have drained some of the higher parts of the wet land to the west of the houses and irrigated them with water from deep wells. The Mexican Indians knew how to water their fields in this way long before the Spaniards came. On the drained and irrigated land are grown more corn and vegetables and fodder for animals.

The mountain land is too dry for crops. In the picture (Fig. 32) we can see that the crops stop at the foot of the slope. The soil is thin, rocky and sandy, and the rain, even in summer, soon soaks in or runs off. There is a little grass and some trees and bushes. On the scanty grass, during the wet season, feed donkeys, cows, goats and sheep. The animals wander about in charge of the village boys in the daytime but are taken home at night. The donkeys work on the farms and carry burdens on the roads ; the other animals supply a little meat, milk or wool. Brooms for sweeping streets are made from the bushes by some of the poorer people ; these brooms are sold in Mexico City. The small trees provide fuel, but little fire-wood is needed except for cooking.

The chief foods are beans and corn. The beans, black, brown or yellow, need a lot of boiling to make them soft. The corn is eaten in different ways but the commonest is in the form of a thin cake. The kernels are soaked in water till they are soft, after which they are ground on a smooth stone to a fine paste. The paste is shaped into cakes which are patted

by the hands till they are flattened out thin like pancakes. Wherever you go you will hear the pat, pat, pat of the women's hands. The cakes are baked on a sheet of metal over a charcoal fire. Every day is pancake day in Mexico. The people of Magdalena Atlipac have no bread and very little meat, but they have plenty of vegetables and fruit.

In the village are made most of the things that the people need. Straw, for instance, is plaited into hats. These hats are very big and have brims, often a foot wide, to shield the eyes from the gleam of the sun and to keep off the rain. The man in Fig. 33 is wearing one. They are so big that they are sometimes used as baskets. As they are plaited by hand, no two of them are ever alike. Baskets, pottery and very beautiful embroidery are also made.

The cloth from which the clothes are made is woven at home on a very simple kind of loom. The usual dress of the men is a loose shirt and a pair of floppy cotton trousers that look like pyjamas. The trousers are often rolled up to the knees. The feet may be bare or be protected with sandals, but stockings are never worn. Besides his suit and his hat the Indian has a long strip of woollen cloth. This is usually of very bright colours. Sometimes it has a hole in the middle through which to push his head ; it then falls round the body like a shawl. During the heat of the day it is folded up neatly and carried on the left shoulder. It is both cloak and blanket for it covers the body during the cold nights.

The women dress much like European women, but they carry brightly coloured shawls and their skirts and blouses are often of most striking colours and patterns. They are fond of fine earrings in their ears but they have no shoes on their feet.

Because nearly every family can do nearly everything necessary to the comfort of the family there are very few people in the village who follow a special trade. The teachers, for instance, do other work besides teaching, and the potters do other work besides making pots ; the cobbler mends

FIG. 35.—Shop in the Plaza, or Square, Magdalena Atlipac

[By courtesy of Robert S. Platt



sandals when there are sandals to mend, the brickmaker makes bricks when bricks are needed, but they do not spend all their time at such work. Like the carpenter, the mason and others they are all farmers.

In the village there are five little shops, but they do not sell much. In Fig. 35 is seen one of the shops in the plaza ; it does not look very large. Only a very few things are required by the villagers—a new knife, a handful of nails, a packet of sewing needles. To pay for these, some of the village produce must be sold, so the villager takes his brushwood brooms or his chickens or turkeys to market in Mexico City. Both he and his goods are carried on the backs of mules and donkeys (Fig. 36) or by motor-buses.

Most of the people of Mexico live in much the same way as do the people of Magdalena Atlipac. There are 400 similar villages in the valleys on the high land. Though very much alike they are not all exactly alike. Some are larger and some are smaller ; in some you will see ox-carts with great solid wooden wheels ; in others everything is carried on mule back or by men and women. On some of the Spanish farms more wheat than corn is grown. Away in the north of Mexico there is so little rain that the land is almost a desert ; down on the coast it is much wetter and warmer than on the high land. But all the same, by far the greater number of the people of Mexico are farmers who live very much as do the people of Magdalena Atlipac.



[Keystone

FIG. 36.—Another Mexican Village

WORK TO BE DONE

1. At what time of the year in Mexico is it summer and hottest? At what time of the year is it coldest? When is there most rain?
2. At what time of the year was Fig. 33 taken? How do you know?
3. Why is little firewood needed in Mexico except for cooking?
4. Name things that show that the land is rather dry.
5. Is there any time of the year when there is no rain?
6. Is it wetter or drier down on the coast? How do you know?
7. Which is the most valuable part of the village lands? Why?
8. Are there any wooden houses? Point out the chimney in Fig. 34.
9. What can one learn about the climate from the clothes the men wear?
10. Is the high land of Mexico all mountains or all flat? Read the chapter and look at the pictures before you answer.
11. Of what use are the blinds in Fig. 29?
12. Write a sentence to say in what way are the houses in Fig. 36 like those in Magdalena Atlipac.
13. Of what is the man's hat in Fig. 36 made? Find the sentences in this chapter that tell you about it and copy them.
14. Copy out a sentence in this chapter that tells you about the clothes the man is wearing in Fig. 36.

CHAPTER VI

SUGAR FROM THE WEST INDIES

1. *On a map of North America find Mexico, the West Indies and Jamaica.*
2. *On a map of the West Indies find the following as you come to them in this chapter : Kingston, the Blue Mountains, Cuba, Barbados, Trinidad.*

WE are going to Jamaica to visit a sugar plantation on the coast, almost due north of Kingston.

We sail from Mexico for Jamaica and leave the ship at Kingston, the capital of the island and the chief port. We enter a fine harbour separated from the sea by a long, narrow sandbank. At the back of the town rise the Blue Mountains. In the harbour are many ships, some of which have called at Kingston for coal. Most of the work of loading the ships with coal is done by black women. Women are "the working bees in the hive of Jamaica." Women not only load coal but, as seen in Fig. 37, they carry, on their heads, great bunches of bananas from the sheds on the dock sides to the ships that take them away.

The name, *Kingston*, and the presence of the negro women tell us that this is a different land from those about which we have already learned. The name *Kingston* is English and the ancestors of the negro women came from Africa.

There were no black people in the West Indies when the first people, the Spaniards, came to these islands. The native people were tribes of Indians. But the Spaniards made the Indians toil in their plantations and in time worked them to

FIG. 37.—Women carrying Bananas to the Ship at Kingston, Jamaica



death. To take their place in the fields, they brought over black negroes, as slaves, from Africa.

Later on the British took Jamaica from the Spaniards as the French and Dutch took the other islands. Fresh supplies of slaves were brought from Africa so that the number of negroes in Jamaica was always growing larger. To-day there are no slaves but there are far more black men than white ; hence, when we land at Kingston, we do not find Spanish and Indians as in Mexico and Chile but Englishmen or Scotsmen and negroes.

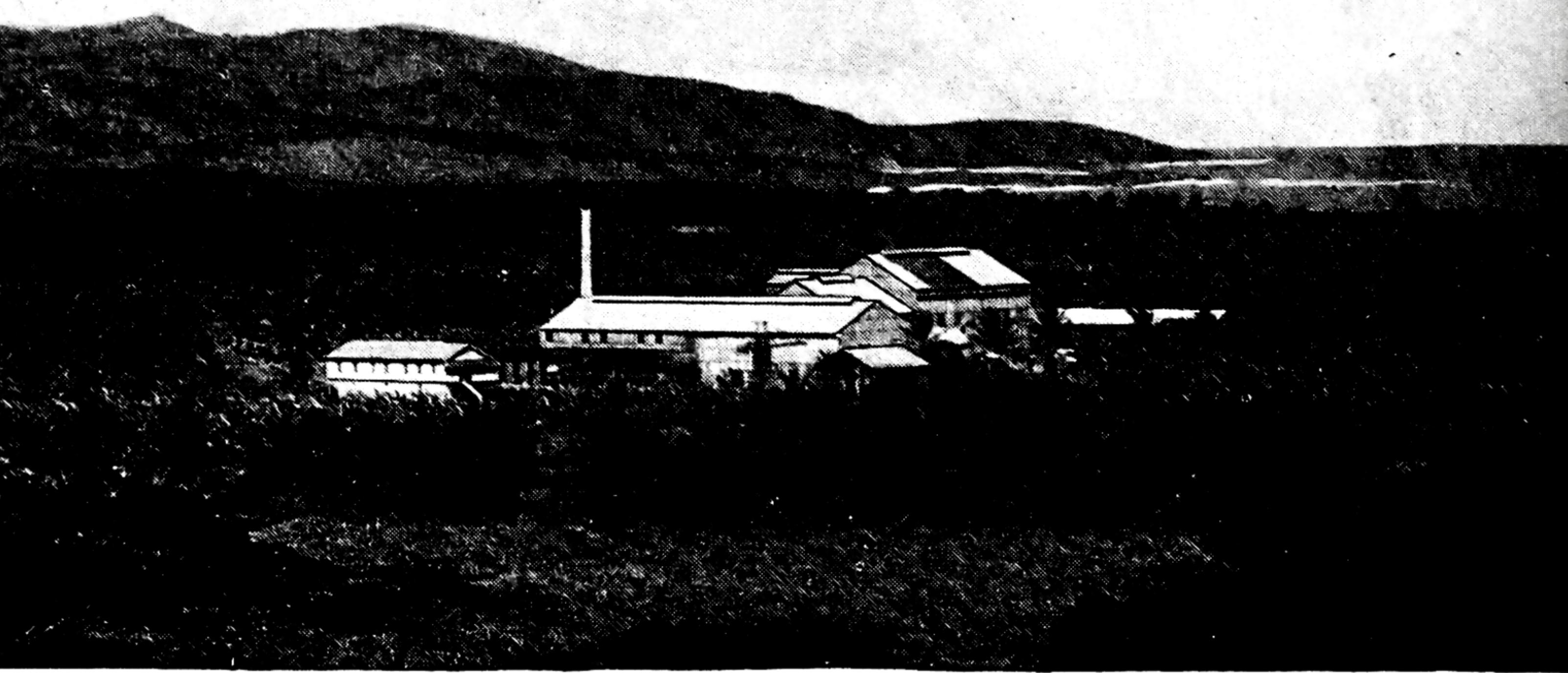
Figure 38 shows a street, King Street, in Kingston. In it you can see both white men and negroes. The words on the shop fronts are English. Notice, too, the tramcar which is open all round to let in air ; it is always warm in Jamaica and there is very little difference from day to day. The carriages, drawn by mules, are also open at the sides. Moreover, the verandas over the pavements and the sun blinds of the houses tell us that it is wise in Jamaica to have shade from the sun.

To reach the sugar plantation that we have come to visit, we

FIG. 38.—King Street, Kingston

[By courtesy of the West India Committee]





[Shepstone

FIG. 39.—Sugar and Banana Plantation, Jamaica

take a train across the island. The railway first runs north-west, then passes through a somewhat lower part to the west of the Blue Mountains and finally turns eastwards along the north coast.

The country through which we travel is very beautiful ; it is full of flowers of all sizes, shapes and colours, trees like the coconut and bamboo and fruits such as oranges, grape-fruit, pineapples and bananas. On the Blue Mountains are thick forests and there are many streams and waterfalls for there is plenty of rain all the year round. When we think of the constant heat and rain, we are not surprised that there is such an amount of luxuriant vegetation.

A few miles after the railway turns eastward, we arrive at our plantation. There, in Fig. 39, is a picture of the country by the sea. In the distance is mountainous land, not so high as the Blue Mountains ; on the low ground is the plantation. The rain which allows the crops to grow is brought by the winds called the North-east Trade winds. As they come from the north-east they drive the waves before them and dash them on the rocks along the coast.

Amongst the things that we see growing are coconut trees, which grow best near the sea, bananas and sugar cane. In these days the most important crop is bananas. In the old days the most important crop was sugar and as the negro was brought to Jamaica chiefly to grow sugar cane, it is about this

plant that we are going to speak. In the picture it is seen, looking like tall grass, amongst the trees.

Sugar cane is, in fact, a kind of grass which grows from 8 to 20 feet in height and is about 2 inches thick. The stem is solid all through, being filled with soft pith that holds a sweet juice. It has joints like a bamboo and at each end of the joints there is a bud, or eye, something like the eye of a potato. It is from these eyes, and not from seeds, that new canes are grown.

The ground is first ploughed and thrown into ridges. On the top of each ridge a trench is cut. In each little trench, pieces of cane stalk, each about 2 feet in length, are laid end to end in two rows. When all the pieces have been laid in the trench, they are covered with soil and in time new canes grow up from the eyes.

When the canes are about eight months old, they are harvested as in Fig. 40. They are being cut by hand and will be carried by bullock cart or motor lorry to the factory that is seen in the centre of Fig. 39. At the factory, the canes are squeezed between steel rollers and a dark greenish-yellow juice flows out. This juice is boiled in pans till it becomes thick and sticky and turns brown. The pans are set



FIG. 40.—Cutting Sugar Cane

[G.R.



FIG. 41.—A Bullock Cart taking Canes to the Factory

[Shepstone



By courtesy of the West India Committee

FIG. 42.—A Negro Village, Jamaica

aside to cool and part of the sugar appears as crystals of raw or moist sugar. This is packed in bags and sent away to be refined to white sugar. The part of the juice that remains after the crystals have been removed is molasses which is used in making treacle. The crushed cane is used as fuel or mixed with molasses and fed to cattle.

Let us now call on the white planter. His house is not on the lowland amongst the sugar canes but on the slopes of the hill where it may catch the sea breezes. It is square in shape, made of stone and well raised above the ground to allow the air to flow freely underneath. We reach the first floor by a broad flight of steps. On three sides of the house there are verandas that can be closed by green blinds to keep out the hot sun.

The floors are black, smooth and polished but the place of carpets, that gather dust, is taken by mats that can be easily removed and shaken. Everything is done to let in the wind and to shut out the sun and the light in order to keep cool.

We go next to see the village where the negroes live. It is near the coast (see Fig. 42) by the side of a stream and the railway passes through it. It is, as we expect, surrounded by trees. It contains a church and a school as well as the houses.

Some of the houses have two storeys but most of them are shacks and huts put down almost anywhere that the builder pleases and the streets run in and out in all directions.

No two houses are quite alike. Some of them are made of heavy grass and thatched with the broad leaves of the banana ; some have a framework of bamboo with walls and roof covered with the leaves of the coconut palm ; some are of mud. Some are even built out of a number of wooden packing-cases sent from England, and as every box has some printing on it the hut shows advertisements for soap, oil and other things mixed up with the names of such places as London, Liverpool and Glasgow. In Fig. 43 is seen one of the many kinds of hut ; it is of white-washed plaster, has one window and is roofed with thatch and surrounded by trees. Like the planter's house, it is raised from the ground and the door is reached by steps.

Though the outsides of the houses are different, the insides are much alike. There are only two rooms, one in which to live and one in which to sleep. In one corner of the bedroom is a bed for father and mother. This is adorned with cheap muslin and a bright ribbon. Negroes are cheerful people and love gay things and there are curtains, tied with ribbon, at most of the windows. A wooden box makes a cradle for the baby but the rest of the children sleep, crowded together, on a mattress. There are blankets for use when the nights are cool but usually no bedclothes are needed.

In the living-room are all the things the family likes to have about. Coloured pictures from magazines are pasted around the walls. Cheap painted cups and saucers, bright beads and even a little doll are stuck on a small table as show things. Hanging on a nail is a long rope of black tobacco for father to smoke in his pipe.

By the side of each house is a garden, where it is easy to grow all the vegetable food that the family requires. The soil is just poked with a stick or slashed with a hoe and then planted. In the loose, rich soil grow small bananas that are to be eaten



[G.P.A.]

FIG. 43.—A Negro Home, Jamaica

raw and big bananas, called plantains, that are to be cooked. At the top of the right-hand corner of Fig. 43 is a banana tree with a great flower on the long stalk that is bending towards us. That is where the bunch of bananas will grow. Then there are sugar cane, Indian corn or maize, beans, melons which the children love, cassava like that of the Amazon Indians and yams. The yam, which grows underground like a potato and is peeled, washed and boiled like a potato, is as good a food as bread and is the chief food of the plantation workers. Very little meat is eaten but salt fish is common.

In one of the houses we may find some family taking a meal. If so, we shall not see them sitting at a table but squatting about on the floor, or even outside, the favourite spot being the doorstep. The small child in Fig. 43 is having a meal outside. Forks and spoons are not used, only knives and fingers ; even gravy is mopped up with the fingers.

If there is anyone at work in the garden, it will be mother. She is a very busy, hard-working woman. She rises at six and prepares the breakfast for her husband and children. When father has gone to work on the plantation and the children have been sent to school, she goes, barefoot, to the well to draw the day's water supply. She may then go to the big house of some white person to scrub and clean or to collect a bundle of washing. At busy seasons she works in the sugar fields. If there is none of these things to be done, she toils in the garden. If it is market day she fills a great basket with fruit and vegetables, balances it on her head as the women are balancing bananas in Fig. 37 and sets off to sell what the basket holds, though it may weigh a hundred pounds and have to be carried a good distance.

The children in Fig. 43 are seen to be wearing short cotton frocks very much like those worn by English children though when they were younger they often ran about without any clothes at all. Father and mother always dress after a white-man fashion except that mother usually has bare feet, and father

too often does without boots. Father, at work, is clad like the nearest man in Fig. 37 in long cotton trousers, a faded cotton shirt and a cap or floppy battered straw hat. Mother has cotton frocks of bright colours and usually wraps her head in a handkerchief that is equally striking—crimson, purple, orange or bright blue.

On Sundays, however, “best clothes” are worn. Mother squeezes her feet into tight boots or shoes, puts on a dazzling frock and a hat that is loaded with flowers and ribbons. Father dons a tight jacket and a high stiff collar and swings a cane. Whatever money the negro can spare is spent on best clothes for Sunday.

The children, happy little things who are usually showing their white teeth in a grin, are expected to go to school. The school is a little square hut in the village and has a young negro girl for a teacher. The pupils are not very fond of books and lessons ; they would rather climb trees or play in the water of ponds or streams. When they wish to climb or swim, they take off their one little garment and leave it on the ground ; then there is no need to bother about spoiled clothes.

The children seem to stay away from school on any excuse and one country teacher tells a story of how much time one of her girl pupils lost over the washing of a frock. She stayed away one day to wash it, another to dry it and a third to iron it.

We have now learned about one sugar plantation and the people who work on it. This plantation is in Jamaica but if we went to most of the many islands of the West Indies, we should see much the same kinds of things. Of course there are some differences. In Cuba, for instance, a great deal of tobacco is grown, in Barbados sugar is even more important than in Jamaica, and in Trinidad there are other coloured people besides negroes. Everywhere, however, the trade winds blow, everywhere there is plenty of rain, though it is always wetter on the north-east of each island, everywhere it is warm, everywhere there is luxuriant vegetation and everywhere there are

negroes who live like the negroes of Jamaica : in the big island to the east of Jamaica there are only negroes. Everywhere outside the few towns like Kingston, the inhabitants, whether black or white, are farmers.

WORK TO BE DONE

1. Name 10 things that grow in Jamaica.
2. What can you tell about the climate from Fig. 38 ?
3. Name as many things as you can in the pictures which tell you that Jamaica is (a) hot, (b) wet.
4. From what direction does the wind usually come in Jamaica ?
5. In Fig. 40 the wind is blowing the sugar cane. Can you tell from that whether the sea is on the right or left ? In what direction is one looking in the picture ?
6. Name at least six different ways by which things are carried from place to place in Jamaica. Read the chapter and look at the pictures.
7. What do you notice about the shadows in Fig. 38 ? What does that tell you ?
8. Write a sentence about what you see in Fig. 41.
9. Write down three ways in which the plantation in Jamaica is like Magdalena Atlipac, and three ways in which it is different.
10. Name the island in the West Indies where there are only negroes.

CHAPTER VII

MERREDIN

On a map of Australia find as you come to them in this chapter : Fremantle, Western Australia, Perth, Darling Range, Kalgoorlie, Sydney, Melbourne, Adelaide, Brisbane.

LET us suppose we have come from Britain and have arrived at the port of Fremantle in Western Australia. It is November. We leave the ship, take a train journey inland, past the big city of Perth, the capital of Western Australia, and go on for about 200 miles on the railway that runs from Perth towards the east of Australia. We leave the train at a small town called Merredin. Two hundred miles is only about half the distance from London to Edinburgh but it takes as long to go from Fremantle to Merredin as it does to go from London to Edinburgh because we stop at every station and there are between twenty and thirty of them. We arrive at five o'clock in the afternoon with the morning papers from Perth. If we had wished to travel faster we could have come by aeroplane but the aeroplane flies on only two days in the week.

On leaving the train we climb the footbridge over the railway lines. From the bridge we can see that the land is rather flat (Fig. 44) though it is a little higher to the south than to the north and there are two or three little rounded hills that stand by themselves ; one of them is seen in Fig. 45. What strikes us most is that we do not see many houses. Merredin is an important town in its neighbourhood but, like most Australian towns, is quite small.

The houses are all one-storey high. Most of them have open ground round them and a number of trees that help to



[By courtesy of Margaret Fraser

FIG. 44.—Merredin from the South-east

hide them. Only the Town Hall and a few other buildings stand up above the rest and they are not high. Beyond the houses, especially to the south, there is a good deal of bush with a few taller trees.

We cross the footbridge and enter the main street, Barrack Street (Fig. 46), running along the north side of the railway. Here are the shops, about twenty of them, each one-storey high like the houses. In Merredin there are two butchers, two bakers, two chemists, three banks and a number of drapers besides other shops and most of these are in Barrack Street. Here, too, is one of the two hotels of the town where we may go for a meal.

After our meal there is still time for a short walk before it grows dark. We turn westward along the street with the railway on one hand and the shops on the other and in a few minutes reach the last of the buildings. In front of us is open land. The land looks dry and dusty but there is a delightful dry smell of eucalyptus in the air. It is not long before the sun sets, which it does between half-past six and seven. There

FIG. 45.—Merredin from the South-west

[By courtesy of Margaret Fraser



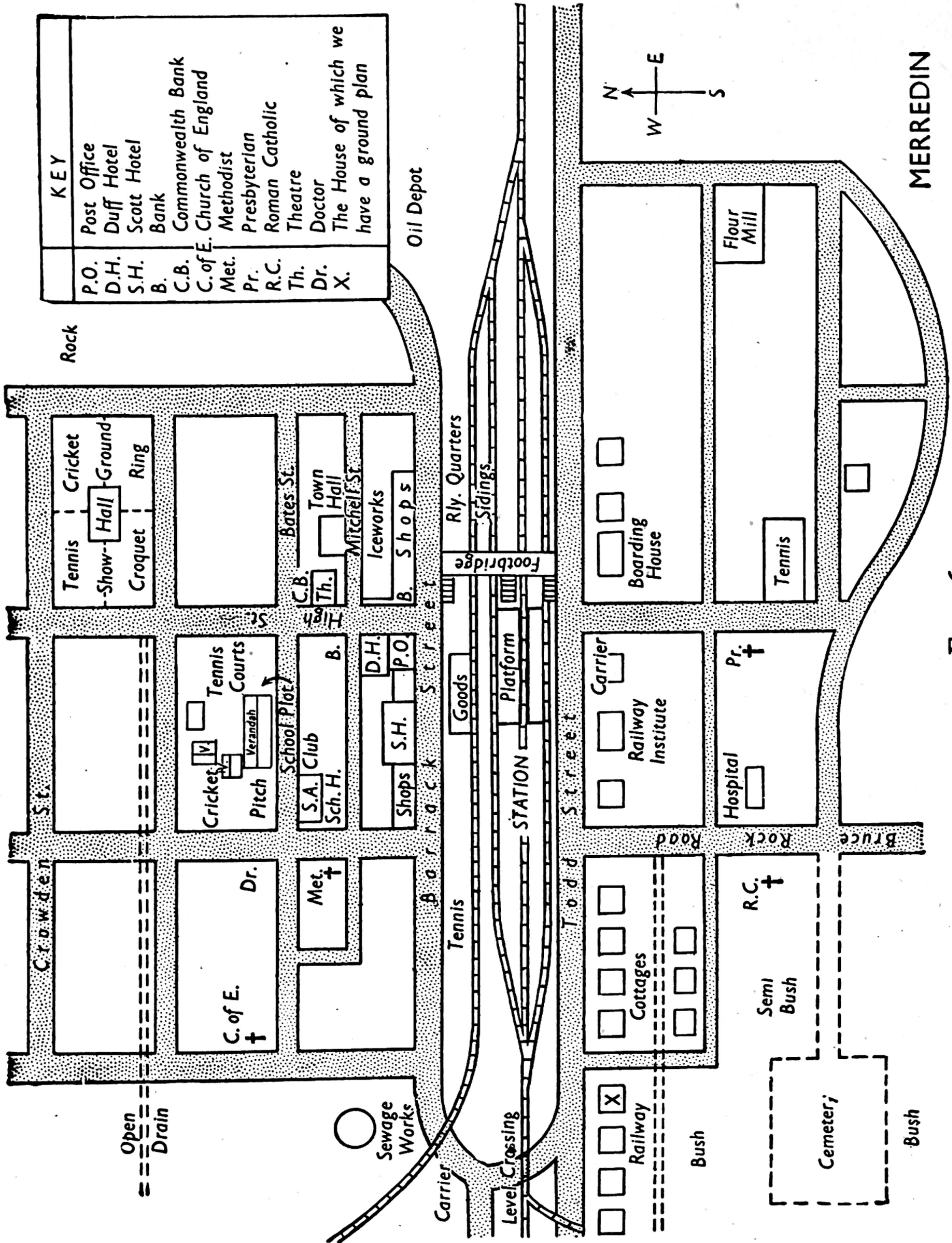


FIG. 46

is a glorious golden sunset but there is very little twilight. After the sun has disappeared it very quickly grows dark. The players in the tennis courts close by stop their game, the stars come out and the lights of the town suddenly shine brilliantly in the clear air. There are no long summer evenings such as we have in Britain but it is warm enough to stay out after dark and in some places people play tennis and other games on grounds that are lit by strong electric lights.

If we were staying in Merredin for any length of time we should stay in a house such as that shown in the plan (Fig. 47). This house is in the south of the town but all the houses are very much the same ; it is built of brick and has a veranda on the north side to give shelter from the sun. Other houses may be of wood and there may be verandas on two sides or even all round. There are three bedrooms and a sitting-room though meals are usually eaten in a lobby at the back ; there is a kitchen where there is a stove that burns wood from the

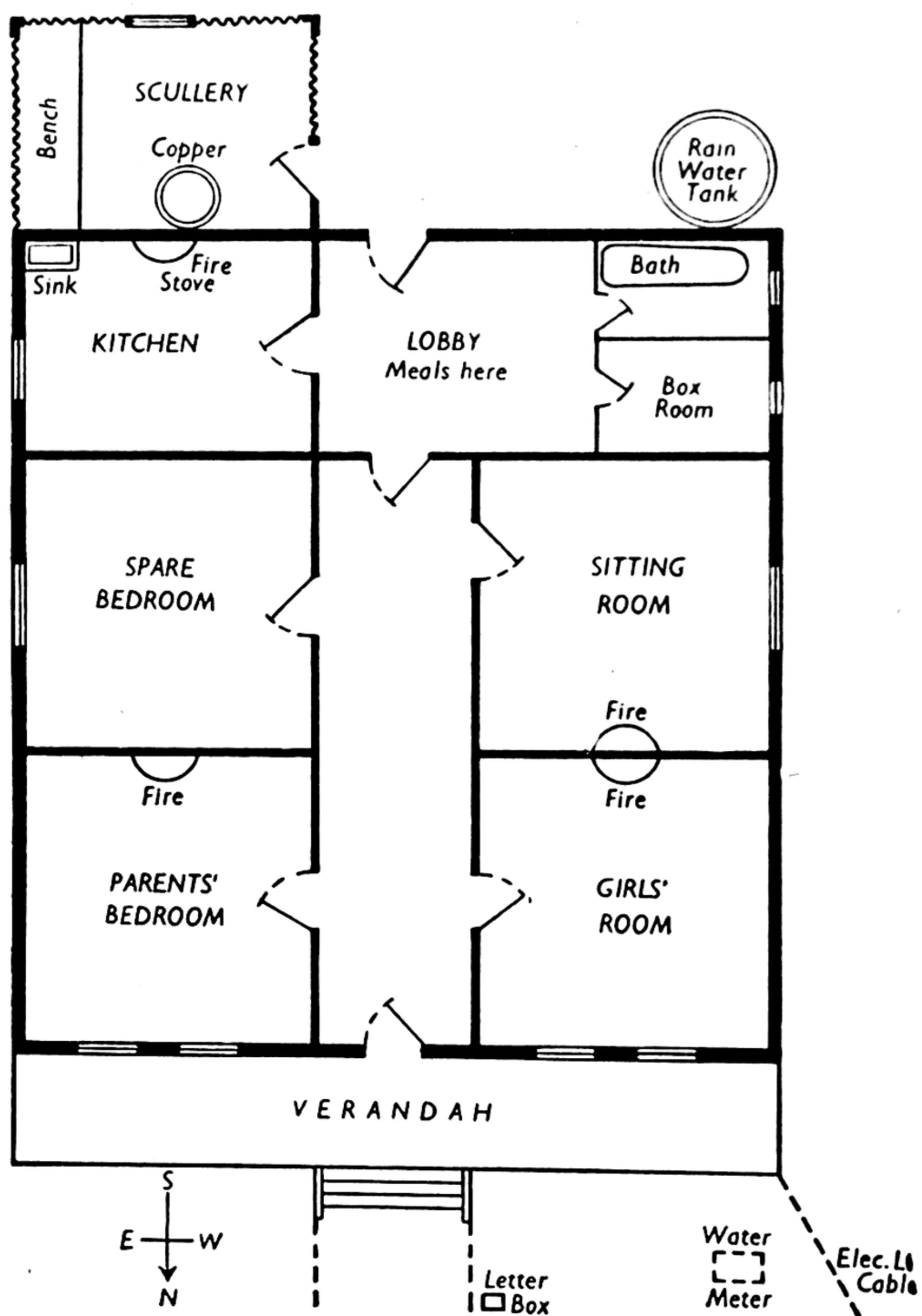


FIG. 47.—Plan of House in Merredin seen on page 68



[By courtesy of Margaret Fraser

FIG. 48.—A House in Merredin

bush and not coal ; coal is scarce. In some houses part of the back veranda on the cooler south side is shut off and used as a kitchen. At the back of the house is the scullery, built of corrugated-iron ; a great deal of corrugated-iron is used in Australia for roofing houses and for building schools and churches but, in places, corrugated-asbestos is coming into use because it is cooler. Also at the back of the house, on the south side, away from the sun, is the corrugated-iron water tank that collects rain water from the corrugated-iron roof (Fig. 48).

The main water supply of Merredin comes from Mundaring reservoir in the Darling Ranges behind Perth. It runs in a pipe line, alongside the railway, almost all the way from the reservoir to Kalgoorlie, where gold is mined. There is so little rain at Kalgoorlie that, if it were not for this water supply, the miners would have to leave the mines. The water has to be pumped to higher levels at seven different pumping stations. Though water is brought to Merredin by the pipe, water is so valuable that every house has its water tank to store the rain which runs off the roof of the house especially in the winter months, which are the rainy ones. There is a good deal of ground round the house. On it are a number of trees some of which are fruit trees. As it is dry in summer gardens are watered during that time.

In summer many people sleep in the verandas of their houses instead of indoors. The nights are usually quite warm but a rug or blanket is often needed because, after a very hot day there may be a much cooler night. In summer, too, ice is required in order to keep food fresh in an ice-chest and for some months of the year ice is made in a factory at Merredin. Water for drinking has to be cooled and this is done in a curious way. The water is put into a canvas bag which is hung up in the shade. The bag is strong enough to hold the water, but it allows a little to soak through so that the outside of the bag is damp. The moisture on the surface evaporates and so cools the water inside. Larger bags, on the trains, are hung up under the carriage windows to supply cool water for the use of the passengers.

At all seasons, but especially in summer, people of Merredin eat a great deal of fruit—peaches, apricots, grapes and oranges as well as apples. Orange, apricot and peach trees are usually grown in the large grounds round the houses while grape-vines and plums are grown on trellised verandas, but most fruit comes from the west coast where there is more rain, especially in winter.

There is a school in Merredin ; its position is shown on the map (Fig. 46). In this school there are 300 boys and girls. They are tall and straight, bright and lively, freckled and sun-burnt. Some of them have bare legs and many of them go barefoot all the year round but their clothes are always neat and clean. They wear shady hats, for the sun is strong. The summer weather is often very hot, too hot for lessons ; when the temperature is over 100° F. the school closes. Many of the children come from farms as far as 10 miles away. They may be driven to school by their mothers in *sulkies*, that is, in one-horse, two-wheeled spring carts, though some of the boys drive themselves.

The school buildings, like the houses, are one-storey high (Fig. 49). The walls of the main building are of brick but the

FIG. 49.—The School, Merredin



[By courtesy of Margaret Fraser

other buildings and the verandas, built on the north side, are of wood. The school has a whole block to itself with hard tennis courts on one side and cricket and netball pitches on the other.

Round Merredin there is a great deal of "bush" growing in the dry, sandy soil. The bushes and trees give out a strong heavy scent and have long roots which collect as much moisture as they can during the wet winter months. These roots, when dried, can be burned, and at the pumping stations on the pipe line, they supply the fuel; coal, as we have said, is scarce in this district. During the day the bush is silent but at night the air is filled with the shrill chirping of the cicadas. Sometimes one may catch sight of an opossum; people call a favourite corner "a possey hole." Very occasionally one may come across a kangaroo, while little green parrots from the bush cause damage to fruit trees.

In the bush, close to the south-east of the town, is a small camp of "blackfellows," descendants of those people who lived in Australia before the white men came. Their houses are merely shelters made of branches. Those blackfellows that live a long way from towns wear very little clothing but those near towns like Merredin wear any old things that the white people do not want any longer. For these old clothes, the native women go from house to house begging.

There have been blackfellows in the neighbourhood of

Merredin for a long time because there they could get water (the "in" in Merredin means water). They obtained it from Merredin rock, one of the little low hills to the north-east of Merredin (Fig. 45). Here there was a hole that was filled by water which flowed off the rock when rain fell just as it flows off the corrugated-iron roof of the modern house. Round the base of the rock a cement wall has now been built so that most of the rain which falls on it is caught in a channel and flows to a reservoir to give a supply of water for the use of the railway.

In other places some of the bush has been cleared for farms and wheat and other grains are grown. The wheat is sown in May or June, when there are heavy showers with bright sunshine in between. Some of it, as well as some of the oats, is cut from August to November, before the seed has appeared, to be used as we use hay. The ripe wheat is reaped from November to February.

The ripe wheat is both shorter and browner than British wheat. At harvest time it is not cut down but the ears are stripped from the stalks by machines, called harvesters, that are drawn by six horses. At such a time the farmer hopes for a hot dry wind ; he does not like a cool south-east wind and he calls it cool when the temperature may be 85° F. The straw is left standing in the fields, or paddocks, till March when it is burned off. The ash helps to fertilise the fields.

Most of the grain is taken in sacks on motor trucks or great wagons drawn by horses, sometimes for long distances, to sidings near Merredin where there is a kind of elevator. There the sacks are emptied into huge bins and the grain is sent by rail to the port of Fremantle for shipment. Some of the wheat, however, is ground into flour at the local flour mill in the south-east of the town for use in the neighbourhood.

On some of the farms sheep are reared ; sheep can thrive in dry lands. They are sheared in September, before the hottest weather, and the wool is sent to the coast for shipment. The country is too dry for many cattle.

The houses of the farmers are very much like those in Merredin though some of them have fewer rooms. Many people sleep on the verandas all the year round though there are frosts now and then in winter. On each farm water for the animals is obtained from a well by means of a big wind pump. Most of the farmers have motor cars and telephones.

One of the farmers' greatest enemies is the rabbit. Rabbits do a great deal of damage to the crops. To keep them off the farms the farmers build rabbit-proof fences. Four miles to the east of Merredin there is one fence that runs north and south for hundreds of miles ; some distance to the west of Merredin there is another to stop those rabbits which have somehow passed through the first.

Once a week, on Saturday, the farmers near enough to Merredin come in to market. Barrack Street is then filled with motor cars, motor wagons, horse vehicles and crowds of chattering people. Saturday night is one of the three nights in the week when the cinema is open and the farmers stay in town, after business is over, to go to the pictures.

Once a year there is an Agricultural Show. It is held in the block of ground between the school and Merredin rock. Show Day is a great day for the town and for the district of which Merredin is the centre. There is a school holiday and samples of the school work are put on show in the Agricultural Hall where there are also exhibits of farm produce such as butter, cream, eggs and flowers. On the Show Ground animals are exhibited and riding displays held. During the rest of the year the Show Ground is used for tennis and cricket.

Merredin in itself is not a large or very important town but it is important to us, in this chapter, because it shows us many of the things we should see in Australia, no matter wherever we went.

On the east of the continent where most of the Australians live, there are the great cities of Sydney, Melbourne, Adelaide and Brisbane. Here there is more rain and there are more

cattle and sheep farms, and the paddocks may be miles in extent. In the north, where it is very hot, there are few people, and in the centre, where it is drier even than in Merredin, there are fewer still.

But in almost all parts of Australia, ways of living are very much like those in Merredin. Outside the few cities, the houses are often of wood, usually one-storey high, roofed with corrugated-iron and set in plenty of ground. They have verandas on one or more sides and a round corrugated-iron water tank often on the south side. The farms have wind pumps to pump water from wells and miles of wire fencing to keep out rabbits. Everywhere the summers are warm and even the winters are not really cold. The days are short and the evenings long but the evenings are usually warm. People can be out of doors a great deal of the time all the year round. They are fond of an open-air life and are mostly good at sports—especially cricket.

WORK TO BE DONE

1. In what months is there rain in Merredin? At what season?
2. In what months is it hottest? What season is this in Britain?
3. Where, in Australia, is there more rain than in Merredin?
4. Where in Australia is it hotter than in Merredin?
5. Name one place in Australia where fruit is grown.
6. Where are there many (a) cattle, (b) sheep?
7. What kinds of roots have the bushes? What is the use of such roots?
8. Write two sentences about the "bush."
9. What have you learned about the way the people live, that tells you that Australia is a warm land?
10. In what direction from Merredin is the sun at mid-day? If you are very clever you can find at what hour the view of the school (Fig. 49) was taken.
11. Find in Figs. 44 and 45, or both, the footbridge, Barrack Street, a bank, shops, post office, Hill Street, Duff Hotel.

CHAPTER VIII

A SHEEP STATION

On a map of south-east Australia find the following as you come to them in this chapter: New South Wales, Victoria, Melbourne, the R. Murray, the Riverina, R. Darling, Sydney.

IN the last chapter we learned a great deal about a little town in the west of Australia and the land in which it stands. In this chapter we shall learn something of the east and especially of one of the sheep stations about which we spoke. From what has already been said you know that much of Australia is different from any of the lands described in the first six chapters. Like some of them it is warmer than Britain but it is much drier than the West Indies or the Amazon forest.

We are now going to visit a sheep farmer in the Riverina District of New South Wales. We begin our journey at Melbourne, the chief port and capital of Victoria, a very beautiful city. We now enter the almost land-locked bay of Port Philip and sail across it for 40 miles. As we make our way up the river Yarra, we see many large vessels loaded with wool, animals, frozen meat, butter, leather and wheat.

We leave Melbourne in a fast and very comfortable train, cross the river Murray and enter the Riverina district of New South Wales. The station or *sheep run* at which we arrive contains many square miles and the flocks of sheep contain many thousands. It is divided into a number of paddocks, like those in Argentina, by means of miles and miles of wire fencing. In each paddock there are 2000 to 3000 sheep which are looked after by one or two shepherds.

In Fig. 50 we have a view of the open country showing us the



[Australian Trade Publicity]

FIG. 50.—A Flock of Sheep, Riverina

grassy land with a few trees scattered here and there and a flock of sheep being driven, with the help of dogs, from one paddock to another. This has to be done when the grass has been eaten or the water has become scarce. The men are on horseback because the sheep station is large, like an Argentine ranch, and distances are too great to be covered on foot.

The house of the owner or manager of the station is called the homestead. It has a veranda on three sides to give shade from the sun, wire gauze over doors and windows to keep out flies and mosquitoes and a roof of corrugated-iron. In many ways it is much like a house on a cattle estancia in Argentina. On the south side, where it is shady and cool, is a big round tank, also of corrugated-iron, which catches any rain that falls on the roof. There is also a windmill that pumps water from a well for the use of the sheep and other animals. There are, in fact, quite a number of these windmills in different parts of the station.

At the homestead there are, besides the big house of the owner or manager, other small houses for the workmen, offices, store-house, a garage, a great many small sheds and a big shed in which the shearing is done. There are so many buildings that at first sight they look like a small village. In Fig. 51 it is



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FIG. 51.—A Sheep Station, Riverina : Sheep ready for Shearing

seen that here at last there is a difference from the cattle ranch on the pampa, for the walls of the buildings are of wood ; timber can be obtained more easily. The fence posts in the neighbourhood of the farm and in some other places are also of wood.

Our host, like most of the people who own the sheep stations of Australia, is white and British and nearly all his work-people are also white and British ; the climate suits white people. He will introduce us to a number of young men who are learning to be sheep farmers. They live in the homestead, as one of the family, and share any amusement that the family may have. But they are not paid very much money and, it is said, they work harder than anyone else on the station. Because they are " learning the business " they are given all kinds of work, from digging drains to driving sheep and usually get all the jobs that no one else wishes to do.

They learn all there is to know about sheep—how to wash and handle them, what to do if they are ill and how to kill them. They know almost as much about horses and spend a great deal of time on horseback.

Work begins very early in the day and is often long and hard but there is always plenty to eat. At breakfast there are

mutton chops, damper and treacle. Damper is a kind of bread made without yeast. At half-past nine there is a break of about half an hour for tea and big slabs of a kind of currant loaf. At noon there are meat and potatoes, damper and plum-duff. At four there is more tea. At half-past six is the biggest meal of the day—meat, potatoes, green vegetables, damper, currant loaf, treacle and jam. And at every meal there is tea to drink, very much of it and very strong.

There is plenty of work on the station all the year round, for though it may be hot in the summer, at no time is it too cold to be out of doors. The busiest time is the shearing season when the wool is cut off. The sheep are then driven, as we see in Fig. 51, from the paddocks into the fenced yards. From these they are driven into little pens. Each pen has a small door opening into the shed and opposite that door is the shearer.

The shearer enters the pen, picks out a sheep, drags it backwards and shears it with a pair of clippers worked by machinery. He clips first the wool on the head, legs and underside of the body and then all the rest in one piece. He does it so quickly that it looks as easy as cutting butter with a hot knife. A good shearer will shear a sheep in five minutes, that is in less time than it takes for a boy to have his hair cut by a barber.

If the shearer cuts the sheep he yells out “ Tar ! ” and along comes a boy with a pot of tar to cover up the wound. The sheep, when sheared, is pushed through a small doorway into another pen outside. Each shearer has his own outside pen and it is easy to count how many animals he has shorn. As a rule he can shear about a hundred a day but the “ ringer,” that is the fastest man in the shed, the one who runs rings all round the rest, may shear as many as two hundred in a day.

As the fleeces fall from the sheep, they are carried away, trimmed, sorted and placed in bins according to their quality. Each sort is, later on, pressed into bales and on each bale are

placed a number of marks that tell the class of sheep, the quality of the wool, the name of the station and the weight of the bale.

Work does not end when the shearing is finished and the sheep have been sent back to the paddocks to grow a new coat. They have to be dipped in a liquid that kills flies and maggots and other things that bring disease and they have to be driven from paddock to paddock as the grass is eaten. If they fall ill they must be tended, or killed at once in order to be able to sell the hide for leather or to prevent other sheep from becoming diseased.

The fences need watching as well as the sheep. Some of these fences are made of wire netting and they are put up, not so much to keep the sheep in but, as in Western Australia, to keep the rabbits out. There were no rabbits in Australia till the English took them there just as they took horses, cattle and sheep. But the rabbits had so many young ones in a year that before long there were millions of them and they ate so much grass that, in places, there was little or none left for the sheep. Seven rabbits eat as much grass as one sheep.

Another animal that must be kept out of the paddock is the dingo, a kind of wild dog, that tears the sheep to pieces, not so much because it is fond of mutton but because it is fond of killing.

A man who looks after the fences and keeps out the rabbits and the dingoes is called a *boundary rider* (Fig. 52) because he spends so much of his time riding round the boundaries of the

FIG. 52.—A Boundary Rider

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FIG. 53.—Sheep in the salt bush

paddocks. One man on this sheep run has charge of 80 or more miles of fence and lives day after day on horseback. He is away from home for several days together, sleeps on the ground, cooks his own food and, all the time, meets no one to whom he can speak.

He carries with him, on another horse, his supplies of food, his blanket and mosquito net and a bundle of such tools as a hammer, a spade and wire cutters. He has also some small hand shears and a bottle of oil so that if he finds a sheep with maggots on it he can cut away the wool, scrape off the maggots and put some fly-oil on the sore place.

There are many sheep stations in Australia just like the one we have described. A very great part of Australia is rather dry and though much of it grows a little grass it would be of little use if it were not for sheep. Sheep, however, flourish in a dry climate and Australia has more sheep than any other continent. There are sheep in every State but the best sheep

FIG. 54.—Wool Wagons

lands are between the rivers Murray and Darling. Here, though the land is dryish, rain is usually well spread through the year and there are even heavy rains at times. Hence, on the whole, there is usually enough moisture to give the short fine grass that sheep like.

In some parts of New South Wales, where it is too dry for grass, much salt bush grows. This, as you can see in Fig. 53, is a small shrub. It is grey-green in colour, smells like fish when it is crushed, has a salty taste and can live with very little rain. The sheep that feed on it, as you may see in the picture, do very well indeed.

Where there is more rain, the grass is rich and suitable for dairy cattle ; on the east of Queensland and New South Wales there are far more cattle than sheep.

The Australian sheep farmer has to think a great deal about water. Not only is the rain always rather scanty but sometimes none may fall for five or six months ; then the grass withers and the animals that need it for food may either slowly starve to death or die of thirst. At such a time the farmer has, if possible, to cart water from some river or creek that has not dried up. It may be so far away that only one journey there and back can be made in a day. Where there are hundreds of animals waiting to quench their thirst, carting water for them is a very lengthy and tiring business.

After the wool has been pressed into bales at the shearing shed it has to be hauled to a railway. At one time, the only way to do this was by means of great wagons pulled by oxen

or horses. In our days, a motor lorry is often used but one can still find bullock teams pulling heavy loads.

A big wagon holds about fourteen tons of wool and needs twenty strong animals to pull it 15 miles in a day, for the tracks may be full of holes and ruts. If there has been heavy rain in a place where the ground is soft, the wheels may sink so deeply that there is great difficulty in getting them out. The rain may cause a river to rise so high that it cannot be crossed and the team may have to wait till the flood goes down.

But sooner or later, by wagon or lorry, the wool arrives at a railway station to be sent to one of the big wool markets where it is sold to buyers who come from many other parts of the world. The chief wool markets are at Sydney and Melbourne.

Sydney, the capital of New South Wales, is a beautiful city with fine parks, squares, hotels, clubs and public buildings, and one of the safest, largest and most beautiful harbours in the world. On the wide, deep-blue waters of its magnificent harbour there is room enough for hundreds of ships to move about safely and many are always to be seen.

There are other farms in eastern Australia besides those where sheep are bred. Where there is more rain the grass is rich and suitable for dairy cattle; in the east of Queensland and New South Wales there are more cattle than sheep.

In parts of the north cattle are also bred for meat. Some of these cattle farms are even larger than the sheep farms of the south and stretch over many miles of country. The houses of the farmers who own these large farms may be small with only two or three rooms and built of wood.

In Queensland a great extent of land is covered with sugar-cane, and in the south-east of Australia many different kinds of fruit are grown, including oranges, grapes and peaches, while the apples are a most important crop not only there but in Tasmania.

But whatever else the ships carry away, the most important



[Australian Trade Publicity]

FIG. 55.—A round-up of Sheep

things they take away from Sydney are wool, meat, livestock, skins and tallow from the pastoral farms described in this chapter.

WORK TO BE DONE

1. Where are there most dairy cattle in Australia? What does this tell you about the amount of rain?
2. Name ways in which Australia is different from (a) the West Indies, (b) Mexico, (c) the Amazon Valley.
3. What language is spoken in (a) Australia, (b) Chile?
4. Name ways in which the Australian sheep station is (a) like, (b) unlike the Argentine cattle ranch on the pampa.
5. Figure 55 is a view on the same sheep station as has been described in this chapter; name as many things as you can see in the picture and underline those that have been mentioned.

CHAPTER IX

THE LAND OF GUM TREES

On a map of Australia find the following as you come to them in this chapter : The Blue Mountains, Queensland, New South Wales, Victoria, Canberra.

IN the pictures of Merredin and of the sheep station in the last two chapters, we have seen both bush and trees. The trees are eucalyptus trees ; the Australians call them gum trees. There are between two and three hundred different kinds of gum trees and most of these are not found in any other country unless they have been taken there from Australia. Let us look a little more closely at them. There is one in Fig. 56 showing a tall bare-looking trunk.

Its leaves have hard leathery skins. Now we know that a plant takes in water at the roots. This water passes up the stem and escapes through pores on the underside of the leaf. Since the leaf is thick and leathery, the water cannot escape so easily. This means that the supply of water for the tree is not very great. If it were, the plant would not have to save it in this way. In Fig. 57 we have an enlarged view of one of the branches on the right side of the tree shown in Fig. 56. Here we can see that the leaves hang down and turn their edges and not their flat sides to the sun so that the tree does not give much shade from the strong Australian sun. This is another trick on the part of the tree to save water. Even when there is enough water for trees there is not often much to spare.

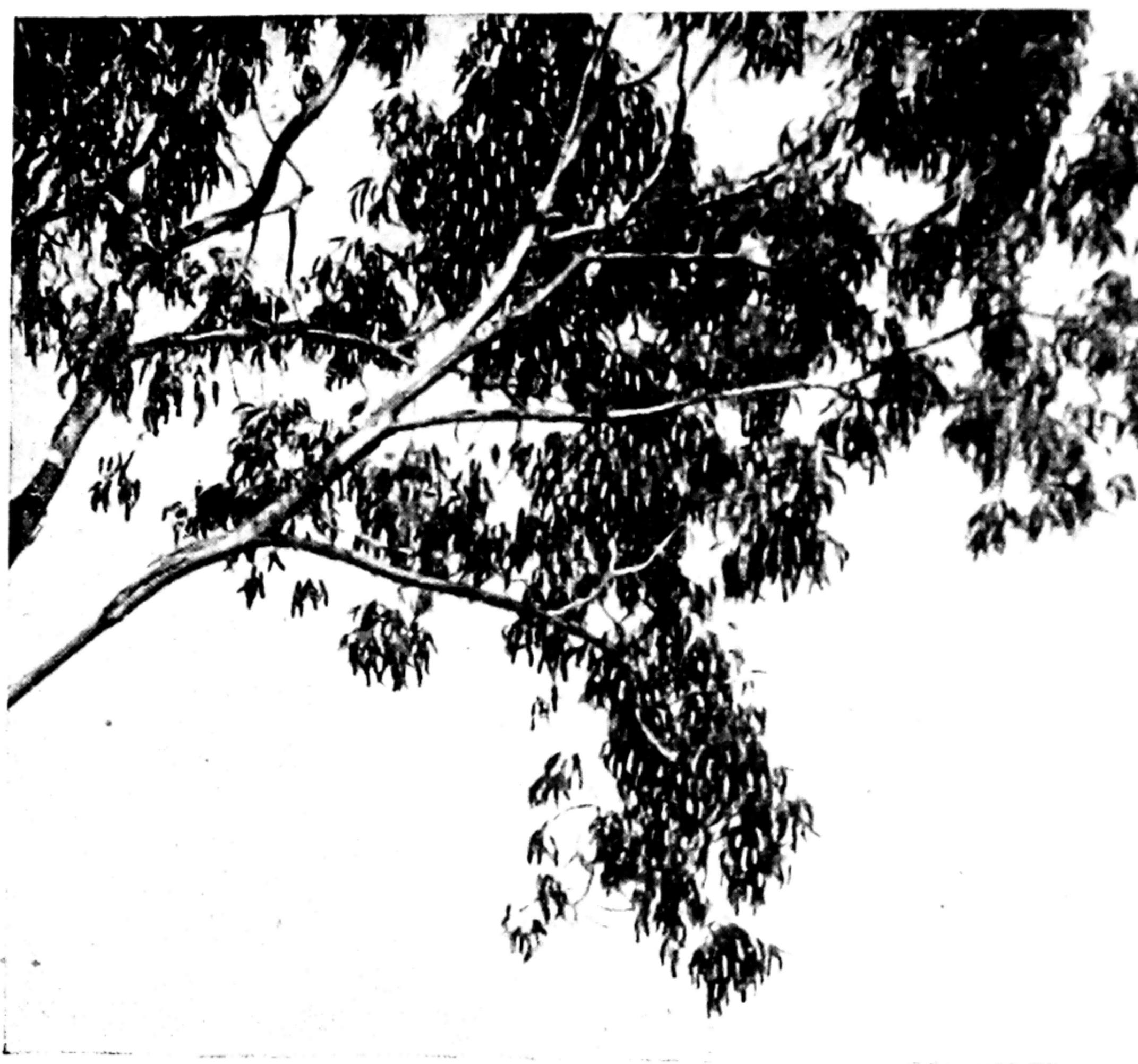
Other trees save water in other ways. Some of them store up, inside themselves, the water they may need to help them to live. Look at the curious tree in Fig. 58. It is called " the



Commonwealth of Australia

FIG. 56.—Eucalyptus Trees

FIG. 57.—Enlargement of a Branch in Fig. 56. This shows how the Leaves hang vertically



bottle tree." The trunk is shaped like a bottle, is about 30 to 40 feet high and very thick. It can be tapped and water drawn from its pithy inside. The branches rise from the neck of the bottle like twisted arms.

Over large parts of Australia there is not enough rain for proper trees. In their place we may have rather scanty, stunted kinds of bushes that are generally called "scrub." There are many kinds of scrub but wherever any one of them is found, it means that the rainfall is not heavy.



In some parts of the north and east of Australia is a kind of acacia with hard, grey leaves. Small woody plants spring up round these shrubs and form thickets. There is little grass, but after rain a

FIG. 58.—A Bottle Tree

[Commonwealth Immigration Office



FIG. 59.—Mallee Scrub

[Commonwealth Immigration Office

few bright flowers spring up and make the dull scrub for a time a little brighter.

In parts of the south and the south-east is found the *mallee* scrub, seen in Fig. 59. The plants are a kind of dwarf gum tree from 8 to 10 feet high and they grow so close together that it is almost impossible to find a way through the thicket. The mallee stores water, not in its stem but in its roots and thirsty natives sometimes dig them up when they want a drink. The roots they choose are usually from 1 to 3 inches thick and are easily dug up for they run for a long way parallel to the surface of the ground and not more than 9 or 10 inches beneath it. Some may even be on the surface as in Fig. 59. A good root, about 10 feet long and $2\frac{1}{2}$ inches thick, will often give a quart of water. The water is not very pleasant in taste to those who are not used to it but those who often drink it learn to like it very much. Of course it does not run out from the root as it would from a jug but drips from it if the root is hung up.

Another plant belonging to some parts of the mallee country, called "pig face," stores up water in large quantities in its leaves. In some places it creeps over the road in such masses that the pulpy leaves prevent the wheels of a motor car from gripping and they slip round and round. The only thing to do is to get out and push.

In a dry land dust and dust storms may be troublesome and the mallee country has its share of this kind of trouble. When

the storm blows the dust covers roads, gardens and fences and may cause drifts up to 7 feet in depth. The door or window that will keep it out of the house has not yet been invented. One farmer's wife, in a dry part of Victoria, jokingly remarked to a visitor, "We don't own the same ground for two weeks on end. Ours is blown to a neighbour one week but we have it back the next."

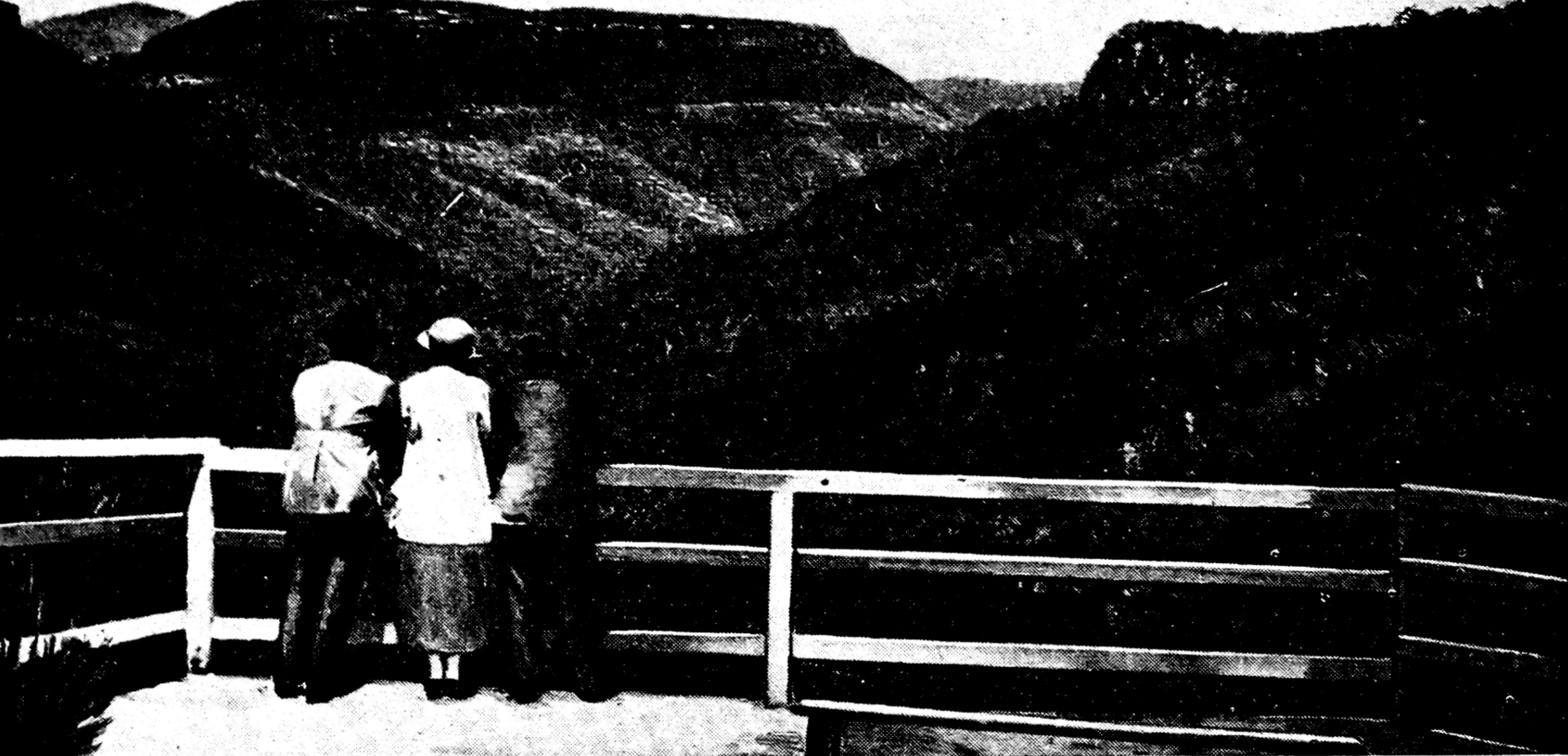
In the hot north there is a scrub which is chiefly a kind of dwarf wattle. Here again the growth is so close that it is difficult to pass through the thicket.

Another scrub, *mulga*, needs so little moisture that it is found in areas that are very dry indeed. Its leaves are sharp thorns ; this is yet another way of preventing loss of moisture. The sharp thorns, that tear both flesh and clothes of all those who try to pass through it, make the traveller more afraid of the mulga scrub than of the mallee.

All these kinds of trees and scrub show that though there is some rain there is not very much. Very little of Australia is really wet enough to allow forests to grow. In three different places, however, trees grow freely because there is more rain.

One of these is in the *south-west* of Australia and here the forests contain two valuable trees, *jarrah* and *karri*. Of these *jarrah* is the more important. Its timber is very strong and will stand a lot of hard wear so that it is used for building railway wagons and carriages and for some kinds of furniture. It does not rot quickly underground or in water and so is used in piles for bridges, wharves and harbour works.

Karri is not so well known but it is one of the largest if not the tallest of the gum trees. Its timber is hard and stronger than that of *jarrah*. For work above ground *karri* is very useful, especially for long beams which have to carry great weights, for flooring and for wagon work but it does not last well underground. It has been used in London and other cities for paving the streets. It is better than *jarrah* for this purpose because it does not become so slippery after hard wear.



[Australian Trade Publicity]

FIG. 60.—Forests in the Blue Mountains

In the *south-east*, on the eastern highlands, there is another forested country. Some of it, in the Blue Mountains, is seen in Fig. 60. This is a true Australian forest of gum trees, some of which are clinging to the steep slopes while others are standing on the flatter land.

In the *north-east*, in Queensland, there is another kind of forest, shown in Fig. 61, where, though there are still a number of gum trees, there are also palms and other trees that live in hot lands. From these latter trees we can learn that the north-east is not only rainier but hotter than some other parts of Australia. The land, seen in the picture, is being cleared in order to grow sugar cane and bananas as in the West Indies.

In places where there is not enough rain for forest or scrub there may be enough for grass. We have already learned that there is a good deal of grass land in Australia, some of it with scattered trees.

In places where there is not enough rain for ordinary grass, there is desert. In Australia the desert is towards the centre and the west. It is not true desert, for rain falls on all parts of it, but not often or in great amounts, so that the land is not of much use.

In some parts there is an abundance of porcupine grass.



[Commonwealth Immigration Office

FIG. 61.—A Forest in North Queensland

This has little balls of long, narrow leaves that look like knitting needles stuck in a big pin-cushion. The roots of the plant are long and wiry and travel far in their search for moisture ; the leaves are covered with hairs which help to prevent that moisture escaping too soon. The spiny leaves sometimes so wound the legs and feet of horses or other animals that have trodden on them that the beasts have to be killed to put them out of their pain. Even the camel, which has a very hard mouth, cannot eat spinifex though it has been jokingly said that he can chew barbed wire.

In some of the drier parts to the west of the mountains in the south-east, crops can now be grown because dams have been built to hold up water in the valleys and form reservoirs. This water can be let out when it is needed so that oranges, grapes and many other kinds of fruit have taken the place of grass and gum trees.

If we now try to think where white men can live most easily in Australia, we can at once leave out the very hot north and the very dry centre and north-west. They will be much more comfortable in the south-east and the south-west where it is

cooler, though rarely cold and where there is a fair amount of rain on the coast.

Especially do people live in the south-east, in New South Wales and Victoria. Here are the big cities of Melbourne, and Sydney and also Canberra, the capital of the whole of Australia.

WORK TO BE DONE

1. What is the hottest part of Australia? What trees grow there?
2. Name three parts of Australia where forests grow.
3. What is the driest part of Australia?
4. Where is the highest part of Australia? What grows there?
5. Where is there most rain in Australia?
6. Write three sentences about Australian gum trees.
7. Name two districts in Australia where fruit is grown.
8. Where do most people live in Australia?
9. What are the biggest cities in Australia? Where are they?
10. On a map of Australia measure the distance from Perth to Sydney. How many times is this the distance from London to Edinburgh.

CHAPTER X

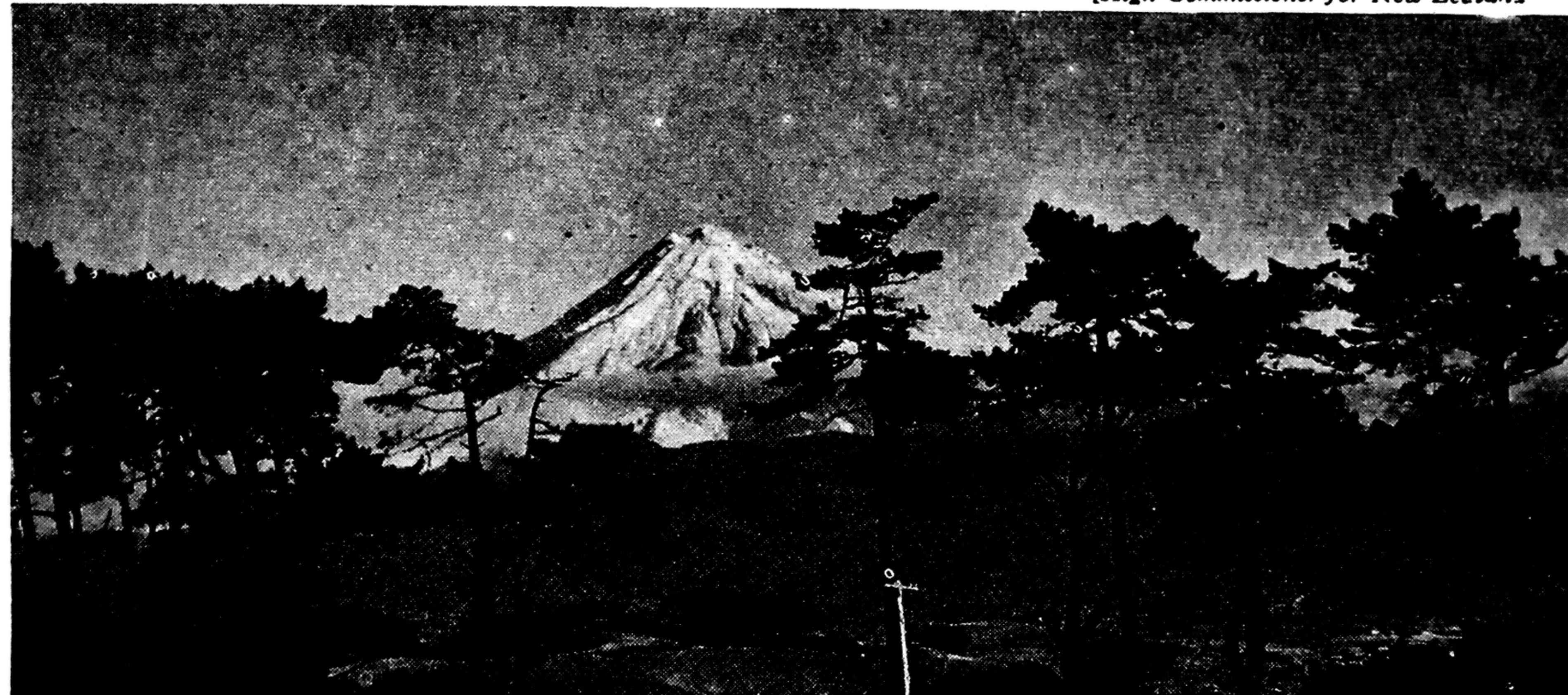
BUTTER FROM NEW ZEALAND

On a map of New Zealand find the following as you come to them in this chapter : North Island, Mount Egmont, New Plymouth, South Island, Wellington, Auckland, Christchurch, Dunedin, the Southern Alps.

IN this chapter we are going to visit a New Zealand dairy farm. It is in the south-west corner of North Island, to the north of Mount Egmont. Look at Fig. 62. Here you see Mount Egmont in the distance. It has a curious conical shape because it is an old volcano. It is so high that its upper part is covered with snow, but down on the low ground there is no snow because there it is quite warm. Nearer to us is part of a great stretch of forest. Trees grow very well here because there is plenty of rain. They are not chiefly gum trees as in Australia. There are many other kinds as well and some of these are very fine and tall.

FIG. 62.—Mount Egmont

[High Commissioner for New Zealand]





[High Commissioner for New Zealand]

FIG. 63.—House of Dairy Farmer

The district round Mount Egmont is called the "Dairyman's Paradise" because it is so well suited to cattle. There were, however, no cattle in New Zealand till they were taken there by the British.

Let us go first to the house of the dairy farmer which you see in Fig. 63. Like most houses in New Zealand it is of wood, as you might expect, because there are so many trees.

Before the farmer came here the lower slopes of the hill were covered with ferns some of which were no bigger than mosses while others were giants that had fronds as much as 20 feet long. You can see some of these very large ferns, like small trees, still growing on the hill behind the house. The rest had to be burned before the soil could be used for any kind of farming.

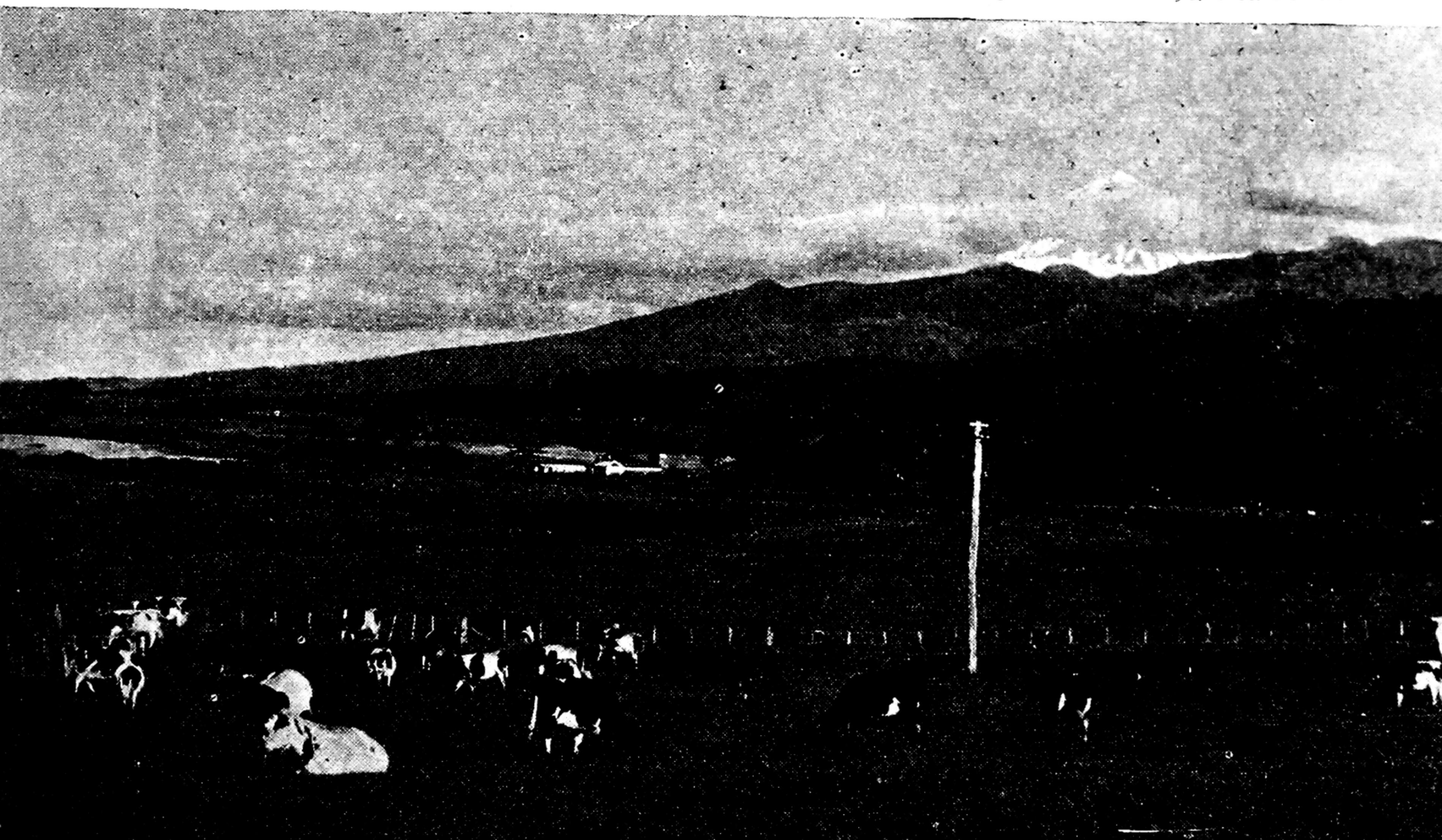
The house is all on one floor. The rooms are rather large; there is plenty of good furniture, nice carpets, a piano, a billiard-table and a wireless set.

There are verandas, up the posts of which creep roses, clematis and other British climbing flowers. The veranda on the left is often used as an open-air sitting-room, especially in fine weather. There is plenty of fine weather for, though there is enough rain for farming, the winters are mild and there is a great deal of sunshine.

In front of the house, but hidden from us by a hedge, is a flower garden full of such British flowers as marigolds, pinks, roses and lilac and an orchard full of such British fruits as apples, pears, plums and strawberries. But because the weather in North Island is rather warmer than it is in England, the orchard has also lemons, peaches and figs. In a farm close by there are so many peaches that they are given to the pigs. Overhead, British birds, like larks and thrushes, fill every sunny hour with song.

FIG. 64.—A Dairy Farm

[High Commissioner for New Zealand]



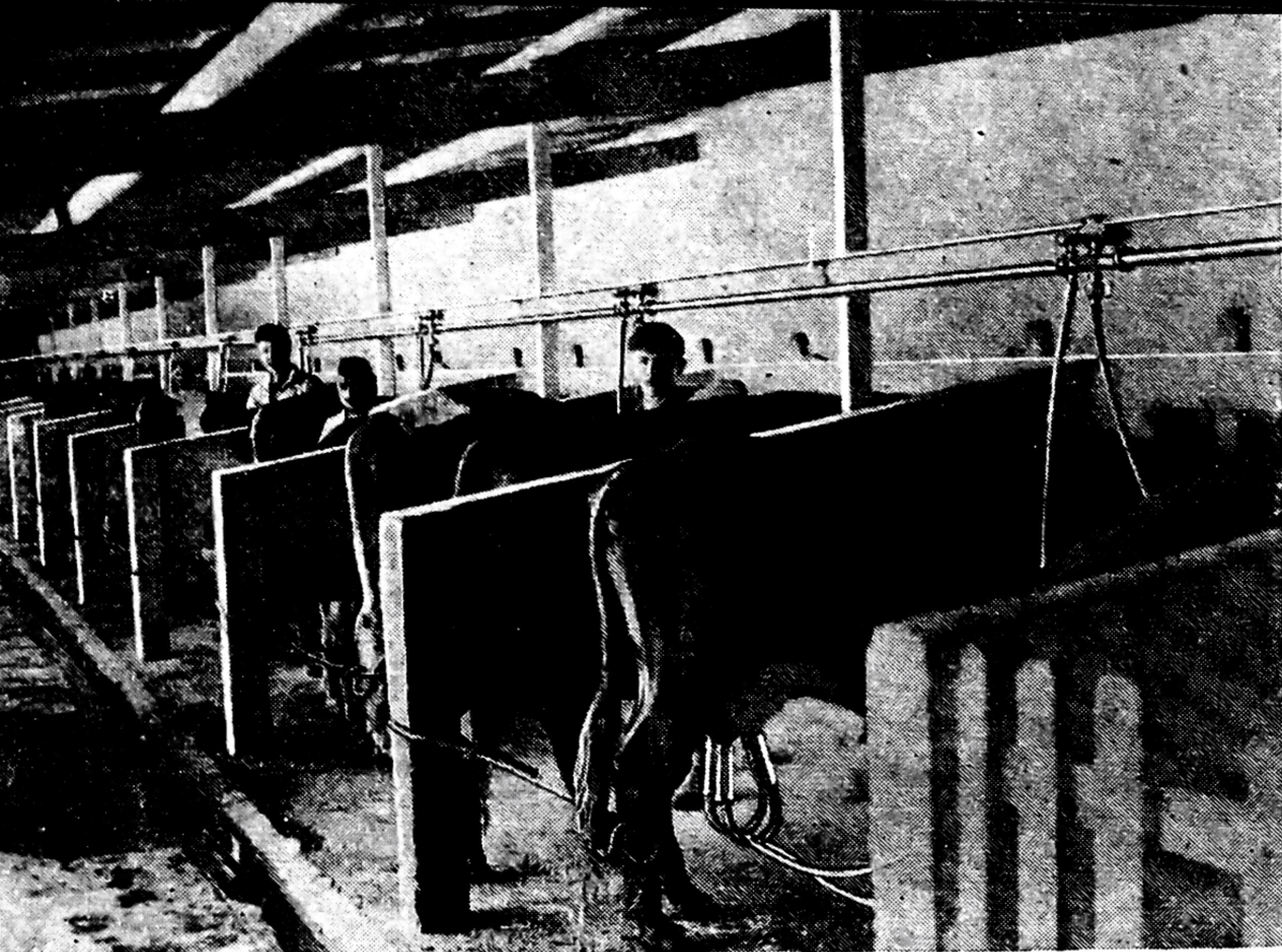


FIG. 65.—In a Milk-
ing Shed

[High Commissioner for New
Zealand

If we go out into the fields, we see the cattle (Fig. 64) feeding on long, rich, juicy grass. It will not matter what time of the year we pay this visit for the weather is warm enough to allow the cows to be out of doors all the year round. The native grass that grew here before the British farmer came was wiry and not good food for cattle. British grasses had to be sown to take their place and on these are now reared a fine herd of cows. In this part of New Zealand, especially, there are thousands of cows which provide milk for some of the best butter in the world.

Note also in this picture Mount Egmont, almost hidden in the clouds because it is so high, the forests on the lower hills and, on the left, the buildings to which the cattle are driven to be milked.

In Fig. 65 we have a picture of one of the milking sheds with cows being milked, as in other farms, by means of machinery worked by electricity. The floor of the shed is made of concrete so that it can easily be washed and kept clean. Everything in the dairy must be clean if the butter is to be of the best quality, and the government sends round inspectors who pay surprise visits to see that the floors, the cans and the machines are made spotlessly clean after they have been used.

When the cows are in their proper places, their legs are tied

together and fastened to one side of the stall so that they cannot move. Long metal clips lined with rubber are fixed and then eight cows are all milked at the same time by means of a machine.

From the milk cheese is made. The milk is first poured into long shallow troughs and then a substance called *rennet* (obtained from the stomach of a calf) is added. This curdles the milk. The solid curd is cut into pieces and a liquid called *whey* is drained away. The curd is next placed in a press and squeezed very hard till no more whey oozes out. The whey is used by the farmer as food for his calves and pigs.

Butter is made from the cream that rises to the top of the milk if it is left to stand for some time. But the dairy farmer does not wait for it to rise. As the milk comes from the cow it flows away in pipes to another machine called a "separator." This machine is also worked by electricity and separates the cream from the milk. The skimmed milk is kept on the farm for the feeding of the pigs and the calves, but the cream goes through another set of pipes into a number of large cans.

The cans are wheeled down to the gate of the farm to be picked up by carts or motor lorries and then taken to a butter factory not far away. There it is in Fig. 66. Notice Mount Egmont again ; it is so big that it can be seen for a long distance. There are, in New Zealand, many butter factories like that shown in the picture. They are spread all over the dairying districts and each of them is fairly near to some group of farms.

When the cream arrives at the factory a man, called a taster, tastes it to see what is its quality or grade. He works at great speed. He dips a spoon into the cream, licks the spoon, throws the spoon into a vessel, picks up a clean one, licks a sample from another can and so on, till he has finished. By means of the taste he divides the cream into grades. It is then weighed and the weight and the class are noted in order



[High Commissioner for New Zealand

FIG. 66.—A Butter Factory

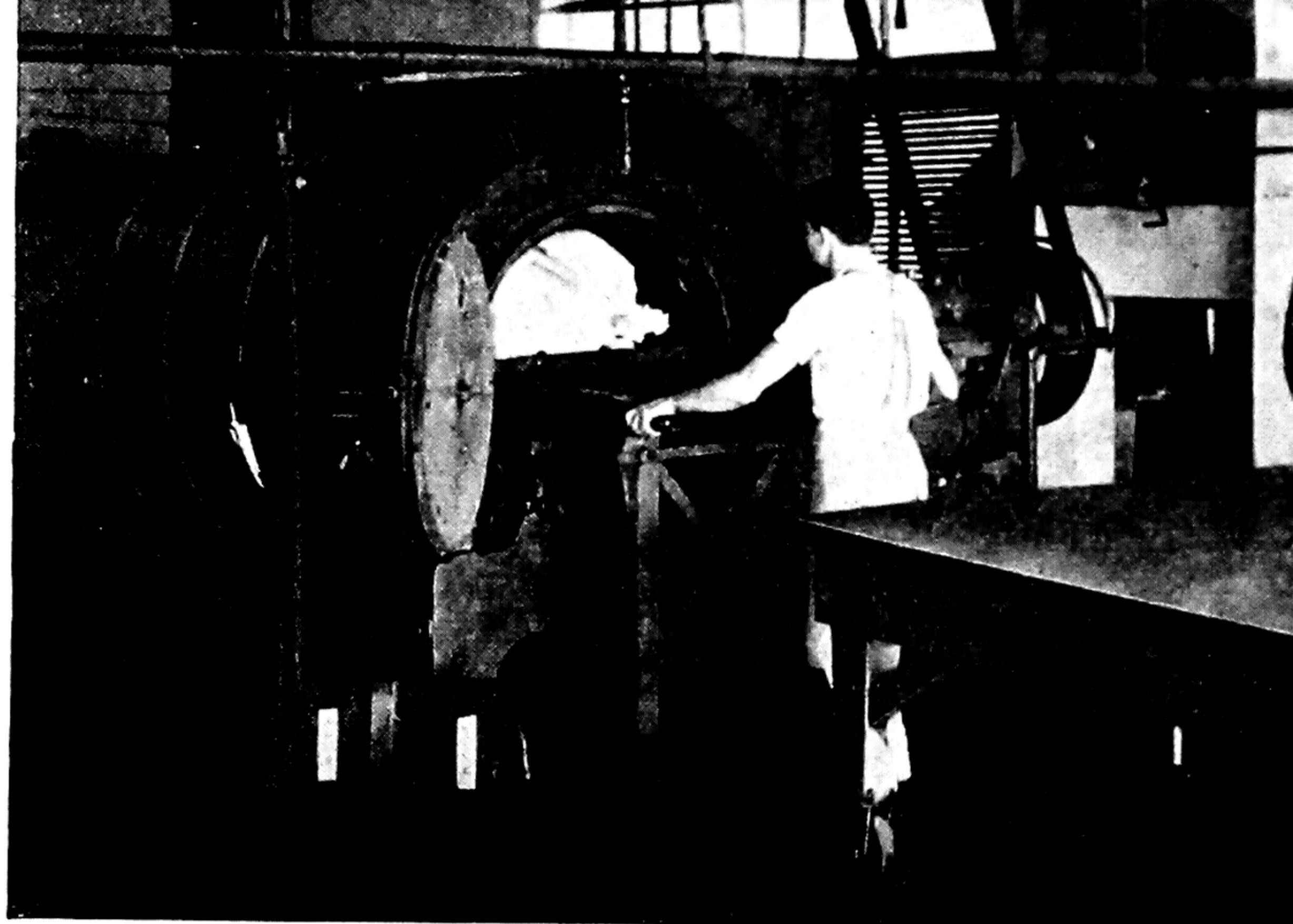
that the farmer may be paid the right amount for what he has sent to the factory.

To turn the cream into butter it must be shaken or churned. It is first heated to kill any germs it may contain and then cooled. When it is cool enough, it goes into churns which are turned by machinery. As they go round and round the little particles of butter in the cream are thrown together and stick to each other till at last they form big lumps that float in thin milk. In Fig. 67 you can see the butter left in the churn after the milk has been drawn off. Each churn makes a ton of butter at a time.

The big lumps of butter are taken from the churn, placed on the table on the right, pressed into blocks and then packed in boxes lined with clean white paper. Each box holds 56 pounds of butter and is stamped with a fern leaf. The big factories saw up their own wood and make their own boxes. The wood used is called white pine and comes chiefly from South Island. It is very suitable for butter boxes because it has neither taste nor smell.

FIG. 67.—Butter in a Churn

[High Commissioner for New Zealand

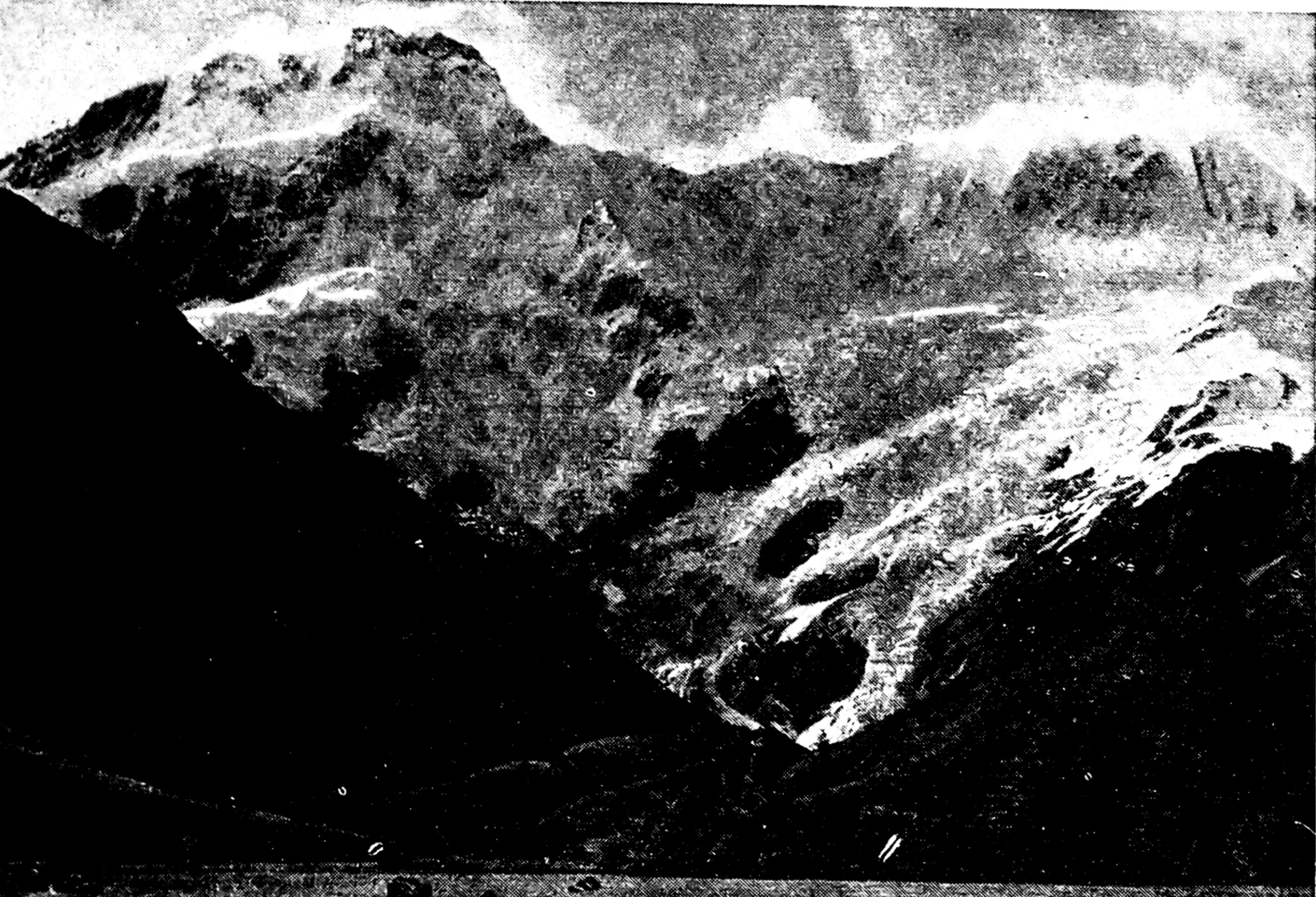


The boxes are sent to New Plymouth and shipped to Wellington by a small coastal steamer. At Wellington they are loaded on a ship for their journey of 12,000 miles. It takes a long time for the butter to reach Britain and during the voyage the vessel passes across parts of the earth where it is very hot. In order that the butter may be fresh and hard when it arrives in Britain it is stored in rooms that are kept very cold like those in the meat boats from Argentina.

A great part of New Zealand is rather like the farm we have just visited. It is not only on this farm that there are ferns. There is, indeed, so much fern country in New Zealand that it has been called the "Land of Ferns." There are also great stretches of forest so that it is convenient to use wood for houses; even public buildings in Wellington are of wood. There is plenty of grass and crops grow well.

Though there are other cities besides Wellington, *e.g.* Auckland away in the north of North Island and Christchurch and Dunedin on the east of South Island, most of the people live in the country and the cities are not nearly so big as those of Australia.

But not all parts of New Zealand are quite like those near Mount Egmont. Some parts of the east, especially in the east of South Island, are drier, though not really dry, and here much wheat is grown, great numbers of sheep are reared and wool and mutton are exported. Away in the south, near Dunedin, where it is somewhat cooler than elsewhere, oats are



[High Commissioner for New Zealand

FIG. 68.—Mount Sefton in the Southern Alps

grown. The oats and the name "Dunedin," which means "Edinburgh," may help to remind us that there are many Scottish folk there.

In the west of South Island, too, there is a long stretch of highland called the Southern Alps (Fig. 68), parts of which are even higher than Mount Egmont and are covered with snow and ice all the year round. Some of the snow which has hardened into ice slides slowly far down the mountain side. This sliding ice is called a "glacier." A glacier can be seen in the centre of Fig. 68.

In North Island there is also high ground with several volcanoes that throw out very hot dust and lava, while farther south is the Hot Lake District where there are lakes of hot water, hot springs and natural fountains, called *geysers*, that shoot out columns of hot water.

In some parts of the country, especially in North Island, are many dark-skinned people called Maoris whose ancestors lived in New Zealand before the British went there. They are a fine, strong, brave race of men and women.

They were good farmers. Though they had very poor tools they tilled the ground with great care and skill and raised

all their own vegetable food. They were splendid boat builders and sailors. They erected houses of wood and carved wonderful patterns on the outside posts and walls. They could weave, plait and net and make cloaks out of feathers to be worn at special times.

Now, unlike the people of the Amazon and the blackfellows of Australia, they are becoming farmers like the British and living very much as do the white men.

New Zealand has been called the "Britain of the South." If we look only at its volcanoes, its snow mountains and its Maoris, we shall perhaps think that this title is a bad one. Yet New Zealand is something like Britain, far more like Britain than any other lands we have visited in this book. The climate is rather like that of Britain, never too hot in the summer and never too cold in the winter, except on the high mountains ; there is no part of the world where folk, especially children, can have such a good time in the open air.

Because of its climate, New Zealand is a very pleasant place in which British people may live, and they have made it even more pleasant and more like Britain than it was when they went there. They took to New Zealand cattle and sheep and the right grasses on which to feed them, grains like wheat, barley and oats, and British vegetables and fruit so that to-day they themselves eat the same kinds of food as they did at home ; they also took British birds and flowers to remind them of the land they had left behind. And all these things—grasses, animals, grain, vegetables, fruit, birds and flowers—also found that New Zealand was a very pleasant land in which to live.

In this book we have seen how different people live in different parts of the world and that they live as they do because different parts of the world are naturally different. In some places there are forests ; in others there are grass-lands. Some parts are high, some low ; some rolling and some flat. Some are hot and dry, some are hot and wet and

so on. Because of these differences it is much easier to live in some parts than it is in others. The Indians in the Amazon valley and the blackfellows in some parts of Australia, lead very hard lives ; the Maoris on the other hand were lucky to live in New Zealand.

But we must remember, too, that people often live as they do because they are the kind of people they are. When the British went to New Zealand they did not live like Maoris. They took with them British animals, fruit, and other things to which they were used, and settled down to live there as they had done at home. When the Spaniards went to South America, they did not live in Indian hovels or spend their time hunting with bows and arrows. They had to use mud for many of their buildings, but they built their houses and churches after a Spanish fashion, and continued to dress in clothes of a Spanish style. In the same way though Australia is not very much like Britain, life in that continent is very much like British life.

Sometimes the newcomer, in settling in a new land, made mistakes. Rabbits and thistles were taken to Australia and became pests. Blackberries were taken to Chile and now cover acres of land to such an extent that the farmers cannot clear them away.

We have learned too that there are different stages of living. The Waiongongs and the blackfellows have a hard struggle to live at all. The Mexicans and the West Indian negroes, because they can use tools and simple machines to help them, live somewhat more easily. The Spaniards in Chile and Argentina and the British in Australia and New Zealand, because they use bigger and better machines, live most easily of all.

WORK TO BE DONE

1. Are the fields in the dairy farm bigger or smaller than those in the Australian sheep farm? Look at the pictures.
2. What separates the fields from each other? What can you tell about the rainfall?
3. Name four kinds of British fruit that are grown in New Zealand.
4. What is butter made from? How is it made?
5. Why are the butter boxes stamped with a fern leaf?
6. There is no desert in New Zealand. What can you tell from this?
7. Which is the coolest part of New Zealand?
8. Cows can be out of doors in winter near Mount Egmont. Is it warmer or colder in winter than in Britain?
9. Why could New Zealand be called the "Britain of the South."
10. Is it colder on high ground or low? How do you know?
11. What shape has a volcano?
12. What comes out of a volcano?
13. What is a geyser?
14. Name two ways in which a New Zealand dairy farm is unlike a cattle ranch on the pampa.
15. Of what materials are houses built in a Mexican village, a New Zealand farm, a Waiongong house, a negro's hut in Jamaica, a pampa ranch?
16. Pick out the right words from the following to fit into the blank in the sentence "There are sawmills in _____": the pampa, Northern Chile, New Zealand, the Amazon valley.
17. On a map in your atlas measure the shortest distance between Australia and New Zealand. Compare that with the distance from London to Edinburgh.
18. Make a list of places in this book where it is warm on low ground and cold on high ground.

REAL GEOGRAPHY

SUMMARY

Chap.	Title	Subject	Area Covered
I	Indians of the Great Forest	Travel up the Amazon to an Indian Settlement	Equatorial Forest of South America
II	The Pampa	Typical Cattle Ranch north of Santa Fé	Grasslands of South America
III	Something to Drink	Typical Coffee Plantation in San Paulo, Brazil Cocoa Plantation, Ecuador	S.E. & N.W. of South America
IV	Chile	Chile	Chile
V	Mexico	Typical Mexican Village	Mexico
VI	Sugar from the West Indies	Jamaica Sugar Plantation	West Indies
VII	Merredin	A Typical Australian Town	Western Australia
VIII	A Sheep Station	Sheep Station in Riverina District	Eastern Australia
IX	A Land of Gum Trees	Australian Trees	Revision of Australia
X	Butter from New Zealand	Dairy Farm near Mt. Egmont	New Zealand

Note.—Names of places are given

REAL GEOGRAPHY

OF BOOK I

Geographical Ideas Incorporated in the Text

~~Climate hot, wet all year : dense forest : forest animals : quick growth of vegetation : travel by water : settled Indians : houses : crops : Indian hunters : no Indian towns : very primitive life : no domestic animals.~~

~~Flat land : no stones : country roads dusty or muddy : estancia : windmills : horses : cattle : much meat eaten : hot in N. cold in S. : sheep : wheat.~~

~~S.E. Brazil : sunny : summer hot and rainy, winter dry and warm with cool nights : country rolling after steep climb from coast : coffee culture.~~

~~Ecuador : strong sunshine : low on coast, high interior : hot and wet on coast, warm and dry on mountains : vegetation varying with height : cocoa culture.~~

~~Four contrasted areas, desert, mountains, hilly and lake country in south, central valley : life in each : central valley, Spanish impression : warm and dry summer, rain in winter : estancia, grain and fruit : mules and oxen.~~

~~Plateau with varied relief : colder and drier on plateau than on coast, but hot during day : rain in summer : food, beans and corn : adobe houses : clothes : donkeys, mules, oxen : primitive farming : self-contained.~~

~~Trade winds : warm and rainy all year : luxuriant vegetation : plantation cultivation, sugar and bananas : negro cultivation : houses.~~

~~Flat : strong sunshine, hot days, cooler nights : summer days shorter than in Britain : winter rain : rather dry : bush : eucalyptus : forest animals : houses with verandas, roofs corrugated-iron : Australian aborigines : grain : sheep : rabbits : water tank.~~

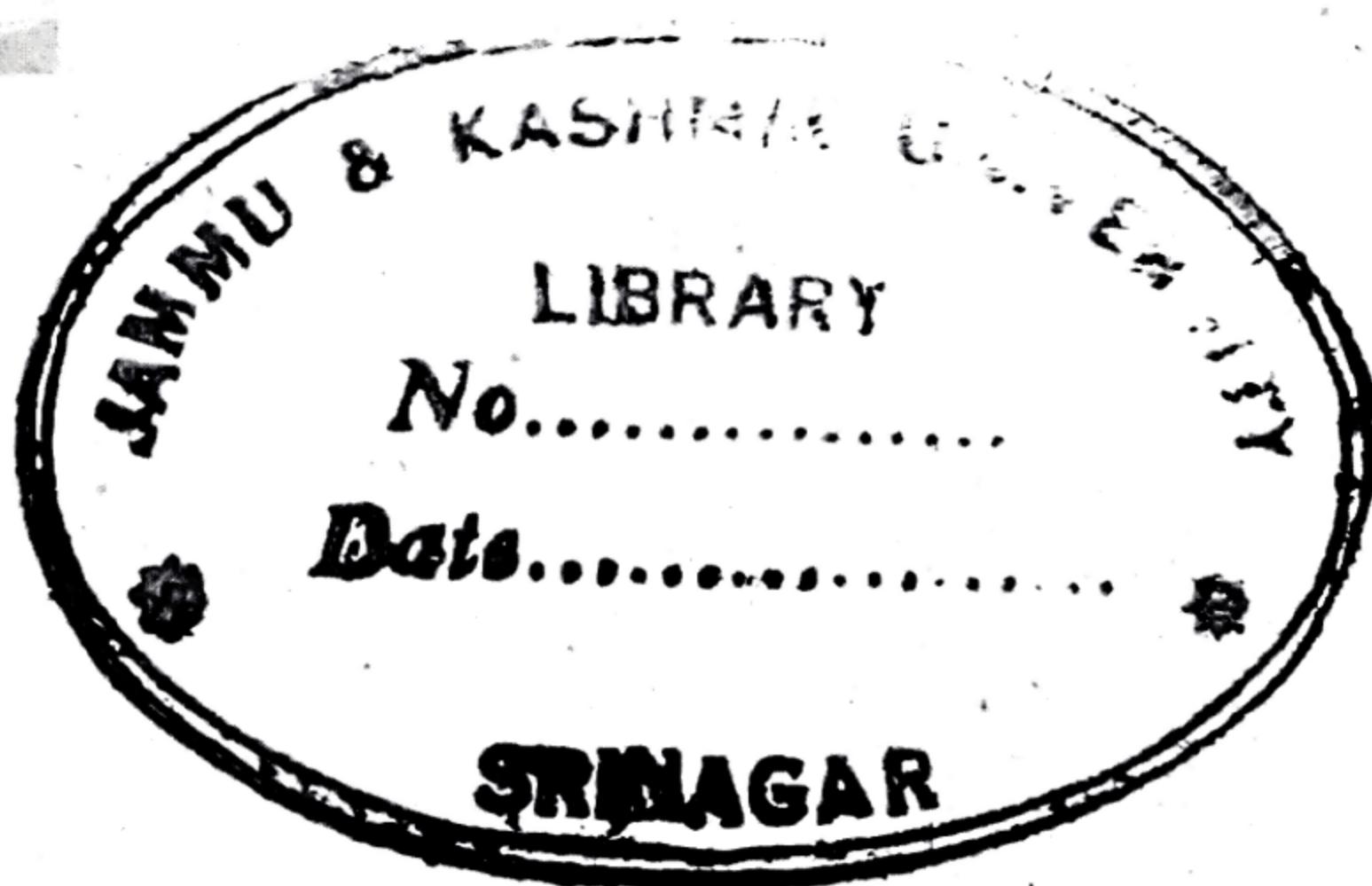
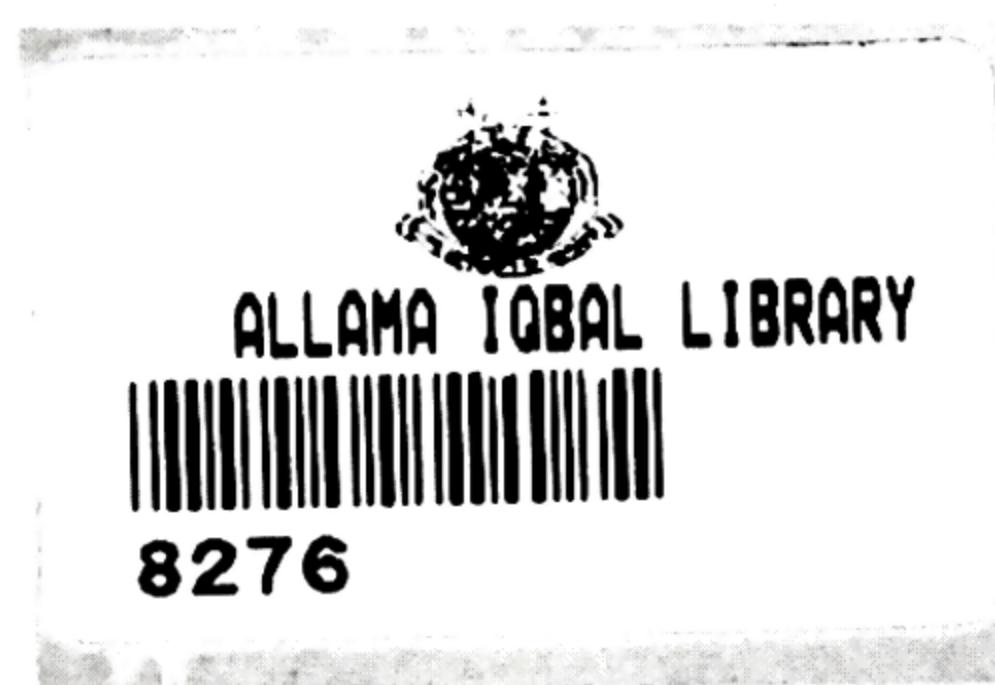
~~Land dry through the year : grass and salt bush : windmills and wells : water tank : wire fencing : horses : sheep : boundary riders : shearing : baling : wool market : cattle on coast.~~

~~Very dry in centre : thorny scrub in dry parts : jarrah in S.W. : eucalyptus forests of S.E. mountains : eucalyptus and palms of wetter and hotter N.E. : most people in S.E.~~

~~Volcanoes and geysers : summer warm not hot, winter mild : plenty of rain all year : sunny : forests with ferns : rich grass : fruit : cattle milking, cheese, butter : shipment : east of N.Z. drier and more sheep : south cooler : west of S. Island high and cold : Maoris.~~

at the beginning of each chapter.

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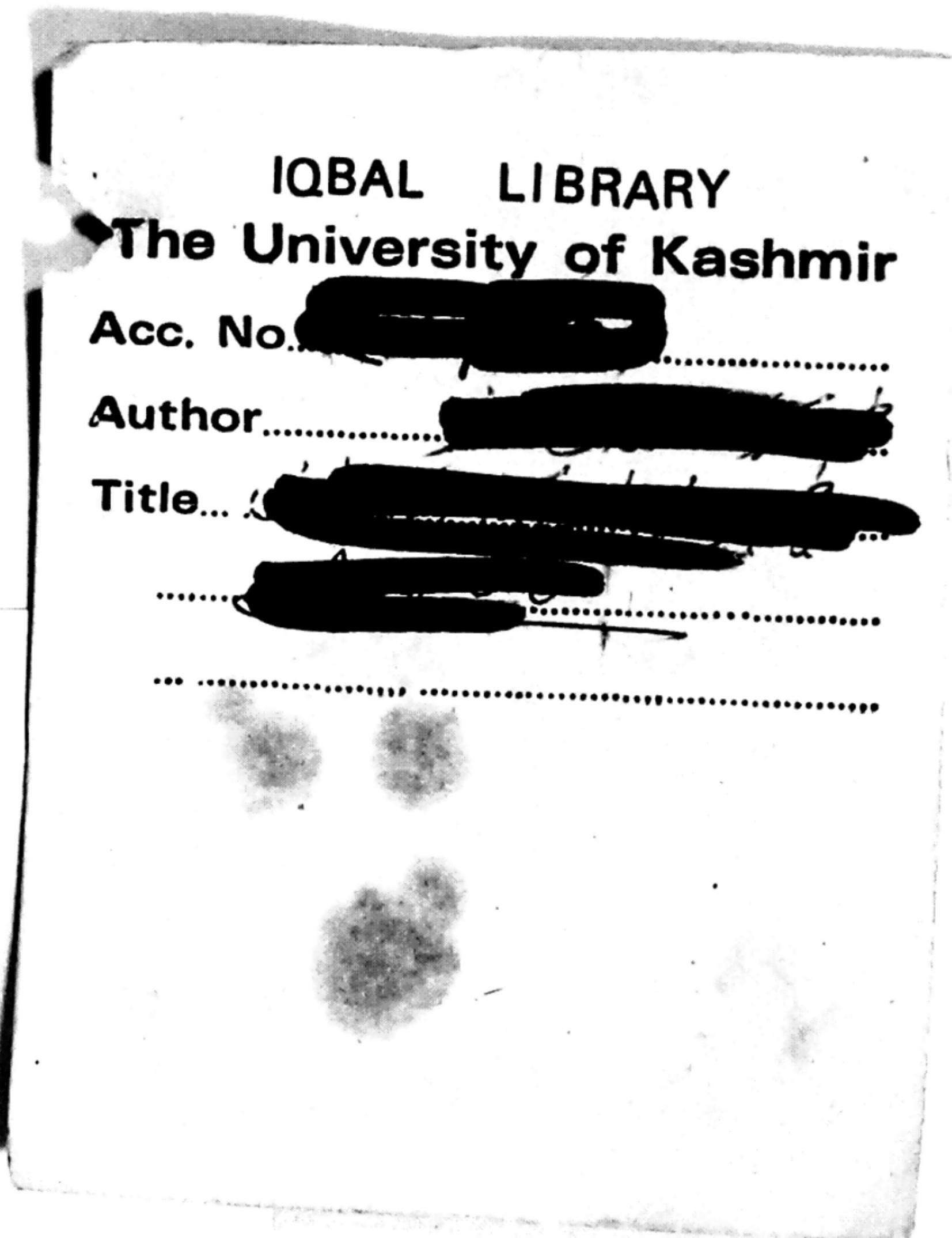
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